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The Self in Romantic Relationships: Understanding Personality and Romantic Relationships from Three Perspectives

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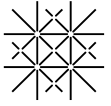
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ABSTRACT

In the pursuit of a better understanding of the self in romantic relationships, this dissertation holds three research perspectives on people's personality and their romantic relationships: a narrative identity perspective, a life-span perspective, and a process-based perspective.

The narrative identity perspective was employed in Studies 1 and 2, in that Study 1 examined personality from an integrative actor–agent–author standpoint and Study 2 theoretically elaborated on the nexus between the narrative identity approach and the study of romantic relationships. More specifically, findings from Study 1 revealed that the actor (expressed as personality traits), the agent (expressed as life goals), and the author (expressed as life narratives) showed empirical associations that can be meaningfully interpreted in light of master motives (i.e., getting along, getting ahead, and a compound of both). Study 2 discussed the relevance and benefits of conceptualizing and analyzing relationship experiences as narrative representations, highlighting narrative methodologies as a valuable tool for understanding such relationships.

The life-span perspective was employed in Studies 3 and 4, investigating whether age matters for personality and romantic relationships. Corresponding aspects were examined in both areas: Life goals as a striving-related aspect of personality (Study 3) and the Michelangelo phenomenon as a striving-related aspect of romantic relationships (Study 4). More specifically, results from Study 3 revealed that age matters for life goals insofar as goal-importance domains and goal-attainability domains mapped onto developmental tasks that adults usually encounter in a respective life stage. Moreover, the association between goal importance and goal attainability was largely bidirectional over time, and goal attainability, rather than goal importance, was positively related to later subjective well-being; these effects were largely independent of age. Findings from Study 4 revealed the Michelangelo phenomenon as a fairly age-independent principle, underscoring that people of any age were likely to move toward their ideal self and to benefit from this movement.

The process-based perspective was employed in Study 5 and examined three daily relationship processes in the transactional link between personality and relationship satisfaction. Findings from this study indicated that people with interpersonal vulnerabilities (i.e., neuroticism, low self-esteem, insecure attachment) reported lower levels of beneficial daily emotional, cognitive, and behavioral relationship processes (i.e., perceived responsiveness, positive expectations, and self-disclosure) and higher day-to-day variability in these processes. However, only the level of these processes, not their variability, explained later relationship satisfaction. The same was true for the reversed direction in that lower levels of beneficial relationship processes mediated the link between relationship satisfaction and later interpersonal vulnerabilities. As such, insights into couples' daily lives contribute to explaining personality–relationship transactions in romantic couples.

In sum, this cumulative dissertation offers a nuanced view on people's personality and their romantic relationships through the application of three distinct yet converging research perspectives. An outlook on how these research strands can be merged in future research is provided.

1. Introduction

We are not the same persons this year as last; nor are those we love. It is a happy chance if we, changing, continue to love a changed person.

William Somerset Maugham (1874 – 1965)

Romantic relationships as one the most important close relationships that people experience in their adult lives have been the subject of growing research interest in the last few decades, as there has been a push to comprehensively understand individuals' personalities and their romantic relationships (e.g., Clark, 2018; McAdams & Pals, 2006). Historically, personality and romantic relationships have mostly been studied separately from one another. More recently, however, personality and romantic relationships have been thought of as interrelated components, that is, as personality–relationship transactions, meaning that personality can have an effect on romantic relationships and romantic relationships can have an effect on personality (Mund, Finn, Hagemeyer, & Neyer, 2016; Neyer, Mund, Zimmermann, & Wrzus, 2014). In the following, three research perspectives on personality, romantic relationships, and their transactional interplay are described and their implementation within the purview of this dissertation is presented. These perspectives—a narrative identity perspective, a life-span perspective, and a process-based perspective—are briefly outlined below.

First, within the narrative identity strand and referring to the conceptualization of personality, it is said that the psychological self comprises the social actor, the motivated agent, and the autobiographical author; summarized in an integrative framework for studying people (McAdams, 2015a, 2015b; McAdams & Olson, 2010; McAdams & Pals, 2006). Previous research has revealed meaningful associations between features of the actor, agent, and author, that is, associations between personality traits, goals/values, and life narratives (e.g., Bauer, McAdams, & Sakaeda, 2005; Bleidorn et al., 2010; McAdams et al., 2004; Roberts & Robins, 2000; Woike & Polo, 2001). Yet, knowledge is sparse on whether personality traits, life goals, and life narratives empirically relate to each other in a way that allows for subsuming these associations as master motives (i.e., getting along and getting ahead; Hogan & Roberts, 2000, 2004); an endeavor that is addressed in Study 1 of the present dissertation (Bühler, Weidmann, & Grob, 2019). In addition, while there has been growing research interest in applying the narrative identity approach within personality psychology (e.g., Adler, Lodi-Smith, Philippe, & Houle, 2016), implementing this strand within the close relationships field is still in its infancy. It was one aim of this dissertation to adopt the narrative identity approach to the romantic relationship context, that is, (a) to discuss the relevance and benefits of applying such an approach to the field of romantic relationships (Bühler & Dunlop, in press; Study 2) and (b) to develop a manual for conducting a relationship narrative interview (RNI; Bühler, Maghsoodi, & McAdams, 2017, accessible through <https://osf.io/tf2d5/> and shown in Appendix F of this dissertation).

Second, from the life-span angle, it is well established that personality and romantic relationships develop over a person's lifetime (Lüdtke, Trautwein, & Husemann, 2009; Roberts, O'Donnell, & Robins, 2004; Wrzus, Hänel, Wagner, & Neyer, 2013). The present dissertation seeks to further address how age matters for personality and romantic relationships and investigates age-

differential effects on strivings within both areas. More specifically, Study 3 focuses on life goals as a striving-related aspect of personality (Bühler, Weidmann, Nikitin, & Grob, 2019), and Study 4 examines the Michelangelo phenomenon as a striving-related aspect of romantic relationships (Bühler, Weidmann, Kumashiro, & Grob, 2018).

Third, implementing a process-based view highlights the dynamic, transactional, and interdependent character of romantic relationships (e.g., Kelley et al., 1983; Neyer et al., 2014). It has been shown that certain personality characteristics (i.e., neuroticism, low self-esteem, insecure attachment) are detrimental to relationship satisfaction, reflecting interpersonal vulnerabilities (McNulty, 2016; see also Karney & Bradbury, 1995). Yet, it remains an active research endeavor to reveal how these interpersonal vulnerabilities contribute to relationship (dis-)satisfaction, and how relationship (dis-)satisfaction, in turn, contributes to interpersonal vulnerabilities. To that aim, in Study 5, the daily occurrence of three beneficial relationship processes (i.e., perceived responsiveness, positive expectations, and self-disclosure) and their day-to-day variability were tested as mediators in the transactional personality–relationship link (Bühler, Weidmann, Wünsche, Burriss, & Grob, 2019). Insights gained through this study may help explain why some couple members are more (or less) satisfied in their relationships than others and why some individuals are more (or less) inclined to develop through their romantic relationships than others.

In sum, the studies included in this dissertation bring together and connect research perspectives aiming at arriving at a more holistic understanding of the self in romantic relationships. Please note that the term “self” as used in this dissertation is conceptualized as a multifaceted, dynamic, and integrated system in which the self is a reflecting and self-regulative unit that is both the product and the producer of development (e.g., Baltes & Graf, 1996; Bandura, 1999; Brandtstädter, 1998; Brandtstädter & Greve, 1994; Herzog & Markus, 1999; Markus & Wurf, 1987). Thereby, this term is well suited to describe and to capture the wholeness and dynamism that applies to a person in his/her romantic relationship. The current work is structured as follows: Section 2 presents the theoretical background and current state of research in the relevant fields, while Section 3 summarizes the research questions of this dissertation. Section 4 gives an overview of the samples, procedures, and methods of the studies included in this dissertation, and Section 5 presents a synopsis of the studies’ results. A general discussion is provided in Section 6.

2. Theoretical Background

2.1 An Integrative Framework of Personality

For a long time, personality aspects within the psychological self were studied in isolation from each other, which underscored their distinctiveness. More recently, however, the interrelatedness between personality aspects has gained notice. For instance, traits and goals are now seen not simply as byproducts of each other but rather as interrelated constructs within the self (Bleidorn et al., 2010; Winter, John, Stewart, Klohnen, & Duncan, 1998). A theoretical framework that accentuates both the distinctiveness and the interrelatedness of personality characteristics is the integrative framework for studying people (e.g., McAdams & Pals, 2006), as briefly described in the introductory section. According to this framework, the self can be understood from three complementary standpoints: As a social actor, a motivated agent, and an autobiographical author—depicting three distinct, yet related, levels of personality.

First, the self as *social actor* encompasses dispositional traits, skills, social roles, and other repeated actions on the social stage of life (McAdams, 2013; McAdams & Pals, 2006). These dispositional traits reflect relatively stable foundational consistencies in thoughts, feelings, and behaviors that distinguish people from one another (Costa & McCrae, 1994; Roberts & DelVecchio, 2000). Most commonly, traits are understood in terms of the five-factor theory of personality, which includes the traits agreeableness, extraversion, conscientiousness, openness to experience, and neuroticism (John & Srivastava, 1999; McCrae & Costa, 1987). Second, the framework suggests that the subjective “I” as a social actor understands the “Me” to be a *motivated agent* that holds characteristic adaptations projected into the future (James, 1892/1963; McAdams & Pals, 2006). These characteristic adaptations address motivational, social-cognitive, and developmental concerns, including a range of motives, goals, values, and aspirations (e.g., Little, 1999) that are contextualized in time and place and with respect to a specific social role (McAdams, 2013). Third, the self as *autobiographical author* forms life narratives within the “Me,” shaping the reconstructed past, present, and presumed future into a coherent storyline (McAdams & Pals, 2006). In late adolescence and early adulthood, people build these internalized life stories, which reflect “the most distinctive and unique aspect of the person” (Dunlop, 2015, p. 312), to establish unity, identity, purpose, and meaning in their lives (Habermas & Bluck, 2000; McAdams & McLean, 2013; Singer, 2004).

Interrelations between personality levels. When suggesting this integrative framework, McAdams (1996) proposed that “an adequate description of the person requires...the delineation of three relatively independent, non-overlapping levels on which the person can be described” (p. 301). While still highlighting the three levels’ “own geography” (McAdams, 1995, p. 365), McAdams adapted the clear distinction between personality levels in his later work and suggested interrelations between them (see, for instance McAdams & Pals, 2006). According to this reasoning, people are born with a certain temperamental disposition that evokes particular goals and values; these goals and values, in turn, are likely to lead one to environments that fit and strengthen the individual’s innate dispositions (Roberts & Caspi, 2003). These proactive person–environment transactions are thought to manifest in interrelations between traits and goals (Roberts & Robins, 2000) and, as argued in this dissertation, in interrelations between traits, goals, and narratives.

Previous research has looked at interrelations between two of the three personality levels and revealed meaningful associations between them, namely, between traits and goals/values (e.g., Bleidorn et al., 2010; Lüdtke et al., 2009; Roberts & Robins, 2000; Roccas, Sagiv, Schwartz, & Knafo, 2002), between traits and narratives (e.g., Bauer et al., 2005; McAdams et al., 2004), and between goals and narratives (e.g., McAdams, 1982, 1988; Woike & Polo, 2001). Yet, only a few studies have looked at interrelations between all three personality levels, and those have been within specific subgroups or areas, such as among gay and lesbian individuals (McAdams, 2005) or in the area of career counseling (Savickas, 2011). Only one study has provided evidence for a general overarching theme within McAdams’s integrative framework (Manczak, Zapata-Gietl, & McAdams, 2014). Applying the regulatory focus theory (Higgins, 1997), Manczak and colleagues (2014) revealed that traits, personal goals, and narratives cohered around the overarching themes of prevention and promotion. However, as the authors themselves conceded, limitations of their study were that it assessed specific personal goals instead of far-reaching life goals and that it did not employ a longitudinal data analytic

approach (Manczak et al., 2014). Hence, the adoption of more far-reaching life goals in the context of an integrative personality perspective is an important next step, as is a longitudinal data analysis.

It was the aim of Study 1 of the present dissertation to address these limitations in that an integrative actor–agent–author view on personality was employed to examine how personality traits, far-reaching life goals, and life narratives predict each other over time. The empirical associations were expected to be interpretable in light of two major master motives, as described in the socioanalytic model (Hogan & Roberts, 2000, 2004): (1) *Getting along*, conceptualized as a desire for social acceptance and approval, referring to the ability to relinquish individuality through participating in larger social networks, and manifesting in striving for community, social relationships, intimacy, or altruism; and (2) *getting ahead*, conceptualized as a desire for status, power, and control of resources, which refers to the capacity to deal with the environment as a separate individual unit, and manifesting in goal pursuit as well as striving for self-expansion or fame (Abele & Wojciszke, 2014; Digman, 1997; Rank, 1945; Sheldon & Cooper, 2008). To summarize, the delineation of the self into an actor, agent, and author has offered a new theoretical approach for understanding the nature of personality, but more evidence is needed to uncover how features of these three levels empirically relate to one another; an endeavor that is addressed in Study 1.

Narrative identity in the context of romantic relationships. Within the integrative framework of personality, one research line has explicitly focused on the third personality level, that is, on narrative identity. The concept of narrative identity has received substantial research attention, for at least three reasons: First, it is said that a consideration of narrative identity is required to truly know a person—to fully capture this individual’s personality—and to understand his or her inner world as well as his or her social functioning (McAdams, 1995). Second, a number of studies have shown that narrative themes reveal incremental validity for a variety of life outcomes (e.g., health, life satisfaction), that is, predictive validity above and beyond the relevance of other personality attributes of this person (e.g., for a systematic overview, see Adler et al., 2016). Third, one of the major benefits of narrative methodologies is that they allow researchers to answer questions that are less accessible via other methodologies (e.g., self-report questionnaires), thereby complementing and expanding the panoply of assessment tools. Thus, taking into account previous theoretical and empirical work, a narrative identity approach is likely to lead to a comprehensive understanding of people and—as argued in this dissertation—their relationship experiences.

Despite its prominence in personality research, the narrative identity approach is less prevalent when it comes to its implementation in relationship research. So far, close relationship researchers have elicited co-constructed experiences from couples about their current relationships, such as through an oral history interview (e.g., Buehlman, Gottman, & Katz, 1992; Carrère, Buehlman, Gottman, Coan, & Ruckstuhl, 2000; Custer, Holmberg, Blair, & Orbuch, 2008; Doohan, Carrère, & Riggs, 2010). Data from this interview and other interviews have been investigated with a focus on (a) partners’ nonverbal behavioral mannerisms displayed throughout the storytelling process (e.g., Gottman, Coan, Carrere, & Swanson, 1998) or (b) their verbal, linguistic style, such as the degree to which partners engage in *we-talk* (e.g., “we,” “us,” “ours”; e.g., Alea, Singer, & Labunko, 2015; Gildersleeve, Singer, Skerrett, & Wein, 2017; Rohrbaugh, Mehl, Shoham, Reilly, & Ewy, 2008; Seider, Hirschberger, Nelson, & Levenson, 2009; Simmons, Gordon, & Chambless, 2005). Only a few of

these studies have gone beyond the pure quantification of behavioral/linguistic indicators to reveal content-related aspects, as Buehlman and colleagues (1992) did by examining the theme of “glorifying the struggle” (p. 299) in couples’ descriptions of hardships.

Although these research strands provide meaningful insights into romantic relationships, they might not capture the full potential of applying narrative methodologies to the study of close relationships, for two reasons. First, quantifying linguistic features of narratives might overshadow the *meaning* that lies in couple members’ stories. Second, by focusing primarily on the co-narration and co-construction of relationship experiences, little can be discerned about how partners independently represent their current romantic relationship. This dissertation seeks to address these limitations in that (a) a theoretical review was provided that elaborates on the nexus between the narrative identity approach and the close relationships literature (Study 2); and (b) a manual for conducting relationship narrative interviews with both couple members individually was developed and tested in a pilot study. The intention behind this was to complement and expand the approaches and lenses through which the romantic experiences that individuals encounter can be understood.

2.2 Personality and Romantic Relationships Across the Adult Life Span

Personality and romantic relationships develop across the life course. In terms of personality, aspects, such as personality traits and life goals, have been found to show both stability and change (e.g., Freund & Riediger, 2006; Lüdtke et al., 2009; Roberts et al., 2004; Roberts, Walton, & Viechtbauer, 2006). Change in traits or goals is, for instance, thought to occur (i) as a reaction to environmental influences, such as important life transitions (e.g., educational/occupational transition; Lüdtke, Roberts, Trautwein, & Nagy, 2011); (ii) in accordance with each other (i.e., earlier traits predicting later goals, but rather not vice versa; Lüdtke et al., 2009); (iii) due to a person’s intention to change (e.g., Hennecke, Bleidorn, Denissen, & Wood, 2014; Hudson & Fraley, 2015; Quintus, Egloff, & Wrzus, 2017); or (iv) as a reflection of an age-related principle (e.g., Roberts et al., 2006). For romantic relationships, the extant findings paint a two-fold picture of how age matters for such relationships: On the one hand, fulfilling relationships are important for people’s health and well-being throughout adulthood (e.g., Deci & Ryan, 2008; Uchino, 2009), and relationship satisfaction has been found to even increase with age (Luong, Charles, & Fingerman, 2011). On the other hand, social network sizes tend to decrease after a person’s second decade (e.g., Lang & Carstensen, 1994), particularly through the reduction of peripheral networks (e.g., Wrzus et al., 2013).

To more thoroughly grasp the life-span character of personality and romantic relationships, the present dissertation investigated corresponding features of personality and romantic relationships, testing whether and how age matters. The focus was on striving-related features, given that strivings (a) are context dependent and hence somewhat malleable to change (Freund & Riediger, 2006) and (b) have been proven to matter for various indicators of well-being and are thus deemed relevant for one’s life (Schmuck, Kasser, & Ryan, 2000). In particular, life goals were chosen as a striving-related aspect of personality (Study 3) and the Michelangelo phenomenon was chosen as a striving-related aspect of romantic relationships (Study 4).

Life goals in light of the adult life span. Conceived as motivated agents (McAdams, 2015b), individuals strive to develop themselves and are inclined to expand who they are. According to this humanistic understanding (Maslow, 1954; Rogers, 1995), people expand their potential by setting a

motivational agenda, which moves them toward internal representations of desired future outcomes or events, represented in major life goals, such as in the goal of starting a family (Austin & Vancouver, 1996). Life goals do not emerge in a contextual vacuum but rather vary with changing circumstances, role expectations, and with maturation over the life course (Elder, 1995; McAdams & Pals, 2006; Roberts & Wood, 2006). Consequently, life goals represent what individuals are planning and working on while they are in a certain life period (Brunstein, Dangelmayer, & Schultheiss, 1996; Cantor & Kihlstrom, 1987). It has been suggested that each life period includes *developmental tasks* that arise at a certain time in personal development and that contain age-graded normative expectations, which entail specific roles, positions, and obligations, and reflect an interplay between social demands and expectations (see also Erikson 1968; Freund & Baltes, 2005; Havighurst, 1972; Hutteman, Hennecke, Orth, Reitz, & Specht, 2014; Little, Salmela-Aro, & Phillips, 2007; Nurmi, 1992). Building on this reasoning, one might assume that age is related to what individuals rate as important and perceive as attainable. Study 3 examined this assumption in that age effects on the importance and attainability of certain life-goal domains (i.e., goal *content*) were investigated from the perspective of their compatibility with developmental tasks (Erikson, 1968; Havighurst, 1972).

In addition to goal content, self-regulation theories of development posit that people strive for control over their lives by balancing the importance and attainability of their goals (Baltes, 1987, 1997; Brandtstädter & Greve, 1994; Heckhausen, 1999; Heckhausen, Dixon, & Baltes, 1998). More specifically, the dual-process framework (Brandtstädter & Rothermund, 2002) proposes two modes for coping with the dynamics between the pursuit and the adjustment of goals, namely, the *assimilation mode* and the *accommodation mode*, which both illustrate adaptive processes but function in antagonistic ways. While the assimilation mode implies a purposeful and intentional change of people's life circumstances or their own behavior, the accommodation mode implies the adjustment of goals to (oftentimes age-based) constraints and the lowering of aspirations (Brandtstädter, 1989; Brandtstädter & Renner, 1990; Brandtstädter & Rothermund, 2002; Rothermund & Brandtstädter, 2003). People might choose different modes to maintain the balance between goal importance and goal attainability. Given that this balance depends on the conditions and resources that individuals perceive are available in a specific life condition, it is possible to assume that age moderates the association between goal importance and goal attainability. Hence, in Study 3, the focus was on the longitudinal association between goal importance and goal attainability (i.e., goal *dynamics*) from the perspective of adaptations to personal capacities (Brandtstädter & Greve, 1994; Heckhausen, 1999).

Finally, it is well established that the pursuit of personally meaningful goals is advantageous for various indicators of subjective well-being (e.g., Brunstein, Schultheiss, & Maier, 1999; Deci & Ryan, 1985, 2008; Emmons, 1996; Emmons & King, 1988; Harris, Daniels, & Briner, 2003; Schmuck et al., 2000). In line with previous theory (Diener, 1984, 1994; Diener, Suh, Lucas, & Smith, 1999; Lucas, Diener, & Suh, 1996), subjective well-being is understood as consisting of a cognitive-evaluative component (global life satisfaction, domain-specific satisfaction) and an affective component (positive and negative affect). When it comes to the predictive effect of life goals on subjective well-being, previous research differentiated between intrinsically oriented goals (i.e., goals directed at the fulfillment of innate psychological needs such as relatedness, autonomy, and competence) and extrinsically oriented goals (i.e., goals directed at receiving external rewards such as

money, fame, and praise) (Deci & Ryan, 2000), revealing intrinsic goals to be positively associated with well-being, while extrinsic goals tend to work against people's well-being (e.g., Kasser & Ryan, 1993, 1996; Schmuck et al., 2000). However, a more nuanced understanding of the importance and attainability of life goals with regard to the cognitive and affective components of well-being as well as a longitudinal investigation in a large age-heterogeneous sample is needed to better understand the long-term consequences of life goals for subjective well-being (i.e., goal *outcomes*). In sum, to better understand how goals are embedded in people's lives across adulthood, the purpose of Study 3 was to systematically assess the content of major life goals, their dynamics, and outcomes in a sample that covered the entire adult life span.

The Michelangelo phenomenon in light of the adult life span. Similar to how they think about life goals, people have a conception of how they ideally would like to be (Higgins, 1987; Markus & Nurius, 1986). Termed the ideal self, this conception is defined as the constellation of those dispositions, values, and behavioral tendencies people ideally wish to acquire (Higgins, 1987; Markus & Nurius, 1986), and moving toward this ideal self is linked to a wide range of personal and relational benefits (Drigotas, 2002; Drigotas, Rusbult, Wieselquist, & Whitton, 1999; Rusbult, Finkel, & Kumashiro, 2009; Rusbult, Kumashiro, Kubacka, & Finkel, 2009; Rusbult, Kumashiro, Stocker, Kirchner, Finkel, & Coolson, 2005). In this regard, the close dyadic context of a romantic relationship is thought to constitute an environment that is likely to nurture (or to block) a person's personal development (Fitzsimons, Finkel, & VanDellen, 2015), particularly because romantic partners are interdependently linked to each other's feelings, thoughts, and behaviors and exert strong and frequent influence on each other (Kelley et al., 1983). A romantic relationship can, thus, at its best, be thought of as a breeding ground for movement toward the ideal self, which gives romantic partners a meaningful sculptural role in each other's personal development process, as illustrated by the *Michelangelo phenomenon* (Drigotas et al., 1999; Rusbult, Finkel, et al., 2009).

The Michelangelo phenomenon describes how people are more likely to display behavioral tendencies that are key features of their ideal self and to be, consequently, more satisfied if their romantic partner perceptually and behaviorally affirms that ideal self (Drigotas et al., 1999). More specifically, the Michelangelo phenomenon is conceived of as a step-by-step process consisting of the following key components: First, *partner perceptual affirmation* characterizes the extent to which the target perceives the partner to be perceptually affirming toward the target's ideal self (Rusbult, Finkel, et al., 2009). Second, partner perceptual affirmation fuels *partner behavioral affirmation*, that is, the extent to which the target perceives the partner to draw out the best in the target and to elicit a subset of possible behaviors reinforcing the target's ideal-congruent qualities (Drigotas et al., 1999; Rusbult et al., 2005; Rusbult, Finkel, et al., 2009). Third, the target experiences *movement toward the ideal self*, which reflects coming to behave in a way that is close to the target's ideal self (Drigotas et al., 1999; Rusbult, Finkel, et al., 2009). These components are linked to each other, leading to three main associations within the framework: Partner perceptual affirmation facilitates partner behavioral affirmation (partner-affirmation association), partner behavioral affirmation promotes movement toward the ideal self (movement-toward-ideal association), and movement toward the ideal self is associated with higher relationship satisfaction and higher life satisfaction (well-being associations).

Research on the Michelangelo phenomenon has led to a number of important findings, yet most

studies have been conducted among college students in the United States (e.g., Drigotas et al., 1999; Rusbult, Kumashiro, et al., 2009), a demographic group that typically adheres to a philosophy of personal growth and self-expansion (Arnett, 2000) and is in a life stage characterized by identity exploration and change (Drigotas et al., 1999; Havighurst, 1972). It is, thus, paramount to test potential age-differential effects on the components and main associations of the Michelangelo phenomenon, which were the research aims of Study 4.

2.3 Mechanisms in the Link Between Personality and Romantic Relationships

While the aforementioned perspectives examine personality and romantic relationships rather separately (though in parallel), the third research perspective starts to merge personality and romantic relationships more closely. As described in the dynamic transactionism paradigm (Asendorpf & Wilpers, 1998; Magnusson, 1990; Magnusson & Allen, 1983; Neyer & Asendorpf, 2001; Neyer et al., 2014), personality and romantic relationships are linked to each other through transactional ties, which have been studied as selection effects (i.e., effects of personality on relationships) and socialization effects (i.e., effects of relationships on personality).

Within the arc of selection effects, neuroticism, low self-esteem, and insecure attachment were revealed as those individual characteristics that most consistently act as risk factors or interpersonal vulnerabilities for romantic relationships, reflected in lower relationship satisfaction of both the target and the partner (Erol & Orth, 2017; MacGregor, Fitzsimons, & Holmes, 2013; Malouff, Thorsteinsson, Schutte, Bhullar, & Rooke, 2010; McNulty, 2016; Mondor, McDuff, Lussier, & Wright, 2011; Weidmann, Ledermann, & Grob, 2016). Common to these interpersonal vulnerabilities is an underlying sense of insecurity: Neuroticism reflects a general insecurity, such as the tendency to experience negative emotions, irritability, and increased fearfulness (Costa & McCrae, 1987); low self-esteem describes an insecure attitude toward the self and the person's perceived worthiness (Leary & Baumeister, 2000); insecure attachment expresses an insecurity toward the romantic partner's availability and the relationship in general (Hazan & Shaver, 1994). Within the arc of socialization effects, and stressing the role of interpersonal vulnerabilities in the romantic realm, romantic relationships have been found to be relevant for later neuroticism, low self-esteem, and insecure attachment (e.g., Davila, Karney, & Bradbury, 1999; Denissen & Penke, 2008; Mund, Finn, Hagemeyer, Zimmermann, & Neyer, 2015; Neyer & Asendorpf, 2001; Robins, Caspi, & Moffitt, 2002; Stanton, Campbell, & Pink, 2017). To fully understand these personality–relationship transactions, it is essential to reveal why these interpersonal vulnerabilities are relevant for romantic relationships and how they are embedded in couples' daily lives.

In accordance with the call to “open the process black box” in social relationships (Back, 2015, p. 95), a growing body of research has examined the processes that underlie selection effects and, to a lesser degree, socialization effects in romantic couples (e.g., Campbell, Simpson, Boldry, & Kashy, 2005; Donnellan, Assad, Robins, & Conger, 2007; Finn, Mitte, & Neyer, 2013; Marigold, Holmes, & Ross, 2007; Murray, Holmes, & Griffin, 2000; Overall, Girme, Lemay, & Hammond, 2014; Sadikaj, Moskowitz, & Zuroff, 2015; Vater & Schröder-Abé, 2015). However, in the search for explanatory mediators, there is a lack of research treating selection and socialization effects together, which would more comprehensively capture the transactional ties between personality and romantic relationships (for an exception, see Luciano & Orth, 2017). There is also a lack of research considering multiple

aspects of relationship processes (i.e., daily levels and day-to-day variability) in their role as mediators; the latter is important because beyond their mere occurrence, relationship processes may vary from day to day, which might threaten feelings of relationship stability, security, and control (Mikulincer & Shaver, 2013; Simpson, 2007) and diminish relationship satisfaction.

Addressing these limitations, Study 5 examined both the daily level and the day-to-day variability of relationship processes as explanatory mechanisms underlying personality–relationship transactions in romantic couples. The focus was on beneficial emotional, cognitive, and behavioral relationship processes; specifically, from each domain one process with known relevance for romantic relationships was chosen (i.e., perceived responsiveness, positive expectations, and self-disclosure). It was expected that people with interpersonal vulnerabilities would experience lower levels and higher day-to-day variability of beneficial relationship processes, which would explain their lower relationship satisfaction. Lower relationship satisfaction, in turn, was expected to lead to lower levels and higher day-to-day variability of beneficial relationship processes, which would explain later interpersonal vulnerabilities.

2.4 Summary

This dissertation examines personality, romantic relationships, and their transactional interplay from three perspectives, jointly addressing the self in romantic relationships. Figure 1 depicts the dissertation’s theoretical umbrella and represents the studies that are tailored to answer the research questions in hand. The specific research questions for each study are presented in the next section. Please note that the figure is for illustrative purpose and not meant to be inclusive. For instance, although the main focus of Study 3 was on personality and the main focus of Study 4 was on romantic relationships, Study 3 also considered romantic relationships (i.e., relationship satisfaction as an aspect of domain-specific subjective well-being; Diener, 2000) and Study 4 also addressed personality (i.e., ideal selves as a type of characteristic adaptation; McAdams & Pals, 2006). The same applies to interconnections between the other studies.

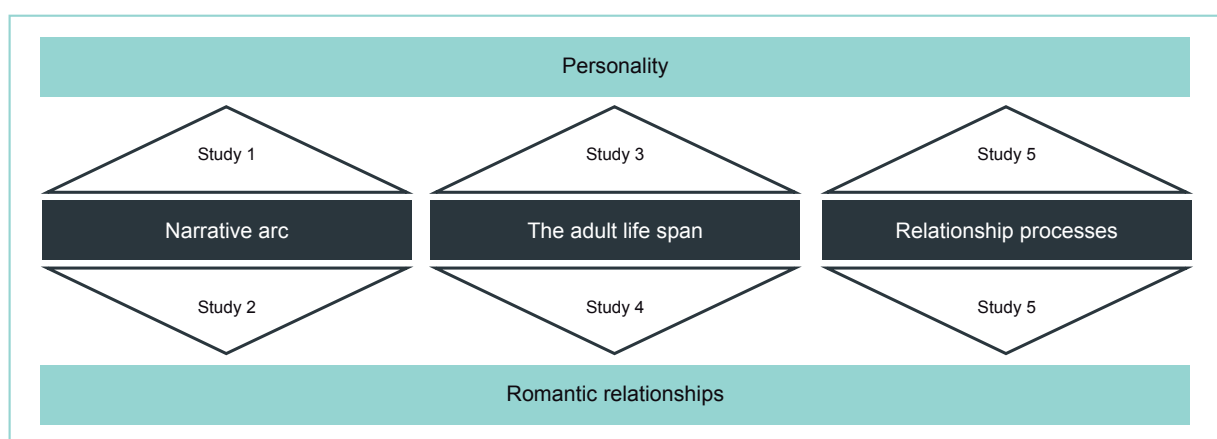


Figure 1. Dissertation concept. Study 1: Bühler, Weidmann, & Grob, 2019; Study 2: Bühler & Dunlop, in press; Study 3: Bühler, Weidmann, Nikitin, et al., 2019; Study 4: Bühler et al., 2018; Study 5: Bühler, Weidmann, Wünsche, et al., 2019.

3. Research Questions

3.1 Narrative Identity Perspective

Research Question 1: (a) Are personality traits, life goals, and life narratives empirically linked to each other over time, and (b) can these links be interpreted in light of getting along and getting ahead as overarching master motives (Study 1; Bühler, Weidmann, & Grob, 2019)?

Research Question 2: What are the theoretical benefits and implications of adopting the narrative identity approach to the study of romantic relationships (Study 2; Bühler & Dunlop, in press)?

3.2 Life-Span Perspective

Research Question 3: Does age matter for (a) the content of goal importance and goal attainability, (b) the 2-year reciprocal association between goal importance and goal attainability, and (c) the 2-year and 4-year predictive effect of goal importance and goal attainability on cognitive indicators (i.e., life satisfaction and domain-specific satisfaction) and affective indicators (i.e., positive affect and negative affect) of subjective well-being (Study 3; Bühler, Weidmann, Nikitin, et al., 2019)?

Research Question 4: Is there an effect of age on the main components of the Michelangelo phenomenon, that is, on (a) partner perceptual affirmation, (b) partner behavioral affirmation, and (c) movement toward the ideal self, as well as on the main associations of the Michelangelo phenomenon, that is, on (d) the partner-affirmation association, (e) the movement-toward-ideal association, and (f) the well-being associations (Study 4; Bühler et al., 2018)?

3.3 Process-Based Perspective

Research Question 5: Do lower levels of beneficial daily relationship processes (i.e., perceived responsiveness, positive expectations, self-disclosure) and their day-to-day variability mediate the transactional link between interpersonal vulnerabilities (i.e., neuroticism, low self-esteem, insecure attachment) and relationship satisfaction (Study 5; Bühler, Weidmann, Wünsche, et al., 2019)?

4. Methods

Data included in this dissertation were derived from two projects. Studies 1, 3, and 4 were based on data from the Co-Development in Personality (CoDiP) study and Study 5 was based on data from the Processes in Romantic Relationships and Their Impact on Relationship and Personal Outcomes (CouPers) study. Given that Study 2 was a theoretical review, no empirical data were included in this work. The usefulness of the developed Relationship Narrative Interview (RNI), however, was tested in a pilot study, the Northwestern Study of Relationship Narratives (NSRN). Findings of this pilot study are only briefly mentioned in this dissertation.

4.1 Overview of the Studies and Procedures

The CoDiP study. The CoDiP study is a longitudinal study (time span of 4 years; three waves) that was conducted in the German-speaking parts of Switzerland and included family members from three generations (i.e., adolescents and young adults, middle-aged adults, and older adults). Individuals from different age groups were recruited through either university and vocational schools (adolescents and young adults) or through lectures given as part of a lifelong learning course aimed at seniors (older adults). Individuals were asked to invite their parents and grandparents (in the case of younger adults), and their children and grandchildren (in the case of older adults) to participate. Participants were also invited to include their siblings and/or romantic partners.

At the beginning of the study (Time 1), an initial sample of 1,050 participants completed, among others, questionnaires on various indicators of personality (e.g., personality traits, life goals) and life outcomes (e.g., life satisfaction, relationship satisfaction). After 2 years (Time 2) and 4 years (Time 3), the participants completed a similar battery of questionnaires as well as the questionnaire on the Michelangelo phenomenon (described in more detail below). A randomly assigned sample of 184 individuals took part in an oral life story interview that was conducted between Time 1 and Time 2.

The NSRN study. The NSRN study is a longitudinal pilot study (time span of 12 months; three waves) that included 20 heterosexual couples in the greater Chicago area of the United States of America. Couples were recruited to take part in a study exploring how couples in committed romantic relationships tell the story of their relationship. After arriving in the laboratory, members of each couple were asked to independently complete a series of non-narrative questionnaires. Next, each couple member individually participated in an oral assessment of the RNI, lasting 1 to 3 hours. After intervals of 6 months (Time 2) and 12 months (Time 3), the couple members were again asked to answer short written prompts on their relationship story and to complete the same battery of questionnaires that was used at Time 1. This study served to test the application and usefulness of the newly developed RNI. To that aim, the key scenes of the orally assessed narrative interviews were transcribed verbatim and coded for affective quality (described in more detail below).

The CouPers study. The CouPers study is a longitudinal study (time span of 2 years; four waves) that followed a large age-heterogeneous sample of German-speaking couples living in Austria, Germany, or Switzerland, using a measurement burst design for capturing couples' daily lives. The recruitment strategies were manifold, including giving interviews about the study to Swiss media and posting the study on Facebook. The recruitment resulted in a total sample of 2,334 individuals (i.e., 1,167 couples) who entered the study. At the beginning of the study, both couple members completed, among other measures not in the scope of this dissertation, self-report surveys capturing their personality and relationship satisfaction (described in more detail below). This was followed by 14 days of diary assessments, in which couple members' emotional, cognitive, and behavioral processes were assessed. After this testing interval, their personality and relationship satisfaction (among other variables) were re-assessed. The same procedure was applied 6, 12, and 24 months later.

4.2 Overview of the Samples

Study 1. In Study 1, a concurrent and longitudinal integrative actor–agent–author perspective on personality was applied. To that aim, data was used from participants of the CoDiP study who completed their self-report measures on personality traits and life goals at Time 1 and Time 2 and who participated in the life story interview. A total of 141 participants resulted (age 14–68 years at Time 1, $M = 35.40$ years, $SD = 15.81$; 66% female, 34% male).

Study 2. In Study 2, the benefits and implications of adopting the narrative identity approach to the study of romantic relationships are discussed. In the realm of this nexus, the RNI was developed and employed in the NSRN study. These pilot data allowed us to test whether the resulting narrative material can be coded based on established coding schemas. The narrative responses of all 40 couple members were used; the average age of females and males in this sample was 25.3 ($SD = 7.3$) and 24.6 ($SD = 5.82$) years, respectively. On average, participants had been in their romantic relationship for 43.5 ($SD = 50.35$) months.

Study 3. In Study 3, goal content, goal dynamics, and goal outcomes were examined from a developmental perspective. To that end, data from participants of all measurement occasions of the CoDiP study were gathered if their age was 18 or above. At Time 1, the sample included 973 individuals, of whom 637 participated at Time 2, and 573 participated at Time 3. The age of participants at Time 1 ranged from 18 to 92 ($M = 43.00$, $SD = 22.08$) years with 57.6% identifying as female and 42.4% as male.

Study 4. In Study 4, the Michelangelo phenomenon was investigated in consideration of age effects by making use of Time 3 data of the CoDiP study. A total of 505 participants resulted (age 18–90 years, $M = 47.27$ years, $SD = 20.52$; 58% female, 42% male) and their mean relationship duration was 20.2 ($SD = 26.45$) years.

Study 5. In Study 5, to analyze the transactional interplay between interpersonal vulnerabilities, relationship processes, relationship-process variability, and relationship satisfaction, data were used from the first two measurement occasions of the CouPers study, resulting in a sample of 604 female–male couples (1,208 individuals). The age of participants ranged between 18 and 81 ($M = 32.88$, $SD = 13.87$) years and the average relationship duration was 8.79 ($SD = 10.69$) years.

4.3 Overview of the Measures and Data Analysis Approaches

Study 1. In Study 1, the interrelations between variables at the actor, agent, and author level were examined. For the actor level, personality traits were assessed with the German version of the Big Five Inventory (John & Srivastava, 1999; Lang, Lüdtke, & Asendorpf, 2001; 45 items; 5-point Likert scale); for the agent level, the importance of life goals was measured with an adaptation of the German version of the Aspiration Index (Kasser & Ryan, 1996; Klusmann, Trautwein, & Lüdtke, 2005; 40 items, 4-point Likert scale); the life-goal measures were subsequently factor analyzed, resulting in a three-factor structure of *agentive goals* (i.e., fame, wealth, image, and work goals), *communal social-engagement goals* (i.e., community and generativity goals), and *communal relationship and health goals* (i.e., relationship, family, and health goals); for the author level, orally conducted life story interviews were based on McAdams's (2008) Life Story Interview (LSI). The coding of the narrative material was operationalized in terms of motivational themes (i.e., communion and agency) on a presence/absence system (for an overview on coding, see Adler et al., 2016, 2017).

To uncover whether traits, goals, and motivational narrative themes were related to each other over time, we applied linear regression analyses and tested (1) whether later traits are predicted by earlier goals and narrative themes; (2) whether later goals are predicted by earlier traits and narrative themes; and (3) whether later narrative themes are predicted by earlier traits and goals. We controlled for age and gender in all analyses. The analyses were run with the psych package (Revelle, 2017) and the lavaan package (Rosseel, 2012) in the analysis software program R (R Core Team, 2016).

Study 2. The main focus of Study 2 was theoretical in nature, that is, focused on the relevance and benefits of applying the narrative identity approach to the study of romantic relationships. Within this scope, the RNI (Bühler et al., 2017; accessible through <https://osf.io/tf2d5/> and shown in Appendix F of this dissertation) was developed and its applicability and usefulness were tested in a pilot study. The RNI mirrors the LSI (McAdams, 2008) but pertains to the story of a participant's current romantic relationship. It was subsequently tested whether key scenes of the RNI can be coded with regard to affective quality, one of four prominent coding categories (Adler et al.,

2016), which has been found to matter in the romantic context (e.g., Dunlop, Harake, Gray, Hanley, & McCoy, 2018). Affective quality was coded (a) on a presence/absence system with regard to redemption (present when a narrative began negatively and ended positively) and contamination (present when a narrative began positively and ended negatively), and (b) on a 5-point Likert scale with regard to the affective tone (for an overview on coding, see Adler et al., 2016, 2017).

Study 3. In Study 3, we tested age effects on the content of goal importance and goal attainability, as well as on the dynamics between goal importance and goal attainability, and on the predictive effect of goal importance and goal attainability on cognitive and affective indicators of later subjective well-being. To that end, goal importance and goal attainability were assessed with an adaptation of the Aspiration Index (Kasser & Ryan, 1996) in its German version (Klusmann et al., 2005; 40 items each; 4-point Likert scale), which was subsequently factor analyzed; life satisfaction was measured with the German translation of the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; Glaesmer, Grande, Braehler, & Roth, 2011; five items; 5-point Likert scale); positive and negative affect were assessed with the German translation of the Positive and Negative Affect Schedule (Krohne, Egloff, Kohlmann, Tausch, 1996; Watson, Clark, & Tellegen, 1988; 20 items, 5-point Likert scale), and domain-specific satisfaction was assessed with 11 items based on the German Socioeconomic Panel and the Swiss Household Panel. On an 11-point Likert scale, participants rated their satisfaction with work and education (occupational domain); their health satisfaction (health domain); and the satisfaction with their family life, their romantic relationship, and their friendships (social domain).

Due to the nested nature of the data (i.e., individuals [Level 1] were nested within families [Level 2]), we applied a two-level approach. Controlling for variation between families on Level 2, Level 1 represents individuals' variations on the relevant key variables. Multilevel analyses were conducted by using the lme4 package (Bates, Maechler, Bolker, & Walker, 2015) in R.

Study 4. In Study 4, the Michelangelo phenomenon was examined in light of age effects. To that aim, partner perceptual affirmation and partner behavioral affirmation were measured with five items each (Drigotas et al., 1999; 5-point Likert scale), and participants were asked to mention up to four ideal selves and whether they had moved closer to or further away from this ideal self as a result of being in their current romantic relationship (Drigotas et al., 1999; 7-point Likert scale). Finally, participants' life satisfaction was measured with the Satisfaction with Life Scale (Diener et al., 1985) in its German version (Glaesmer et al., 2011) and relationship satisfaction was assessed with the Relationship Assessment Scale (Hendrick, 1988) in its German version (Sander & Böcker, 1993; seven items; 5-point Likert scale).

Due to the nested nature of the data (i.e., individuals [Level 1] were nested within families [Level 2]), we again applied a two-level approach. Controlling for variation between families on Level 2, Level 1 represents individuals' variations on the relevant key variables. Multilevel analyses were conducted by using the lme4 package (Bates et al., 2015) in R.

Study 5. In Study 5, we tested the mediational role of levels of daily relationship processes (i.e., perceived responsiveness, positive expectations, and self-disclosure) and their day-to-day variability in the transactional link between interpersonal vulnerabilities and relationship satisfaction. For the interpersonal vulnerabilities, neuroticism was assessed with the Big Five Inventory (John &

Srivastava, 1999) in its German version (Lang et al., 2001) using the eight items to assess neuroticism (5-point Likert scale); self-esteem was assessed with the Rosenberg Self-Esteem Scale (Rosenberg, 1965) in its German version (von Collani & Herzberg, 2003; 10 items, 4-point Likert scale); attachment was measured with the Experiences in Close Relationships–Relationship Structures Questionnaire (Fraley, Heffernan, Vicary, & Brumbaugh, 2011; nine items; 7-point Likert scale) with items translated into German. For the relationship processes, each day, participants rated (a) how responsive they perceived their partner to be (Laurenceau, Feldman Barrett, & Rovine, 2005; four items; 5-point Likert scale); (b) how they expected their partner to be the next day (Schoebi, Perrez, & Bradbury, 2012; three items, 5-point Likert scale); and (c) how they experienced the degree to which they shared facts and information, thoughts, and feelings with their partner (Laurenceau et al., 2005; three items; 5-point Likert scale). Relationship satisfaction was assessed with the German version of the Relationship Assessment Scale (Hendrick, 1988; Sander & Böcker, 1993).

To operationalize each relationship process and its variability, two latent factors per process and per couple member were created: The first factor represented the level of the relationship process (i.e., the item means of this relationship process across the 2-week testing period) and the second factor represented the variability of the relationship process (i.e., the standard deviation of each item of this relationship process across the 2-week testing period; for a similar approach, see Gerstorff, Siedlecki, Tucker-Drob, & Salthouse, 2009).

Due to the nested nature of the data (i.e., individuals [Level 1] were nested within romantic couples [Level 2]), Actor-Partner Interdependence Models (APIMs; Kenny & Cook, 1999; Kenny, Kashy, & Cook, 2006) and Actor-Partner Interdependence Mediation Models (APIMeMs; Ledermann, Macho, & Kenny, 2011) were used. These models were applied to both level and change in the respective outcome, that is, to the outcome level at Time 2 (14 days later), to the outcome level at Time 3 (6 months later), and to change in the outcome between Time 2 and Time 3 (across 6 months).

5. Synopsis of Results

5.1 Narrative Identity Perspective

Results of regression analyses of Study 1 revealed that personality traits, life goals, and motivational narrative themes were significantly related to each other. More specifically, the findings showed that (a) agreeableness was positively related to communal social-engagement goals and to communal narrative themes; (b) extraversion was positively linked to agentic goals, while conscientiousness was positively linked to both agentic goals and communal relationship and health goals; no significant associations were found on the narrative level; and (c) openness to experience was positively linked to communal social-engagement goals and to agentic narrative themes. No significant findings emerged for neuroticism (all $ps > .05$).

Study 2 presents the conceptual and methodological background of the narrative identity approach, which is followed by a brief review of previous research using narrative methodologies for studying romantic relationships. The article closes with a series of viable current and future research directions at the nexus between the narrative identity approach and romantic relationships. One of these directions was implemented in the development of the RNI, which was used in the pilot study. Findings from this study showed that the RNI serves as a valuable tool to assess romantic partners' relationship narratives in that narrated key scenes can meaningfully be coded for affective quality.

5.2 Life-Span Perspective

Findings from the multilevel analyses of Study 3 revealed that age was negatively linked to the importance and attainability of personal-growth, status, and work goals and positively linked to the importance and attainability of prosocial-engagement goals. While the importance of health goals was positively linked to age and the importance of social-relations goals was negatively linked to age, their attainability was not associated with age. Furthermore, the association between goal importance and goal attainability was more pronounced for the predictive effects of earlier goal importance on later goal attainability (than vice versa) and was largely independent of age. Finally, the attainability of intrinsic goals, rather than the importance of such goals, was positively related to later subjective well-being; and satisfaction was higher in those domains in which individuals thought they could achieve their goals. Both of these predictive associations were largely independent of age.

Findings from the multilevel analyses of Study 4 revealed age to be negatively associated with partner perceptual affirmation and partner behavioral affirmation and to moderate the link between partner perceptual affirmation and relationship satisfaction. However, age was linked to neither the movement component of the Michelangelo phenomenon nor its associations with well-being (all $ps > .05$), highlighting this core part of the framework as independent of age.

5.3 Process-Based Perspective

Findings from the APIM and APIMeM analyses of Study 5 indicated that couple members with interpersonal vulnerabilities reported lower levels of daily beneficial relationship processes and higher day-to-day variability in these processes. However, only the occurrence of these processes, not their variability, explained participants' lower relationship satisfaction after 14 days and 6 months. The only significant mediation on the change outcome was an actor-partner indirect effect for perceived responsiveness in the link between avoidant attachment and change in relationship satisfaction. That is, target individuals high in avoidant attachment indicated lower levels of perceived responsiveness over the 2-week testing interval, which explained their partners' decrease in relationship satisfaction over the next 6 months. For the reversed direction, we found that individuals with lower relationship satisfaction experienced lower levels of beneficial relationship processes and higher day-to-day variability in these processes. The occurrence of these processes, not their variability, explained participants' interpersonal vulnerabilities after 14 days and 6 months. In this direction, no significant mediational effects were found on the change outcome (all $ps > .05$). In general, partner effects were less pronounced than actor effects, a finding that speaks to the role of the target person's own daily emotions, cognitions, and behaviors in the context of personality-relationship transactions.

6. General Discussion

6.1 Narrative Identity Perspective

The purpose of Study 1 was to apply an integrative actor-agent-author perspective on personality to provide more evidence on how dispositional traits, life goals, and narrative themes are linked to one another. While corresponding to previous research on the interrelatedness of personality levels (e.g., Bleidorn et al., 2010; Roberts & Robins, 2000), the study's findings also expand on previous research. More specifically, the empirical associations between traits, life goals, and motivational narrative themes found in this study can be interpreted as mapping onto overarching master motives (Hogan & Roberts, 2000, 2004). As such, getting along, getting ahead, and a

compound of the two served as a helpful theoretical principle on which to organize the interrelations: For agreeableness, links were found to communion on both the goal level (i.e., communal social-engagement goals) and the narrative level (i.e., communal narratives), suggesting a three-layered motive of getting along. For extraversion and conscientiousness, most consistently, associations were revealed with agency on the goal level (i.e., agentic goals) but not, as expected, with agency on the narrative level, suggesting a two-layered motive of getting ahead. Finally, for openness to experience, associations emerged with communion on the goal level (i.e., communal social-engagement goals) and with agency on the narrative level (i.e., agentic narratives), suggesting a compound motive of getting along and getting ahead across personality levels. Explanations for why linkages with openness to experience indicated this dual pattern might be found in the basic definition of the trait openness to experience (e.g., McCrae & Costa, 1997): People high in openness to experience are described as expressing an understanding for and a tolerance of other people (John & Srivastava, 1999), which likely coincides with these people's striving to attain communal goals. At the same time, people high in openness to experience are described as being intellectual, imaginative, and open-minded (John & Srivastava, 1999), which seems to be compatible with the motivational agenda of narrated self-direction and agency. Given their explicit preference for variety and complexity (McCrae, 1996), it is plausible to assume that people high in openness to experience nurture this preference with a twofold structure of getting-along goals and getting-ahead narratives.

However, it needs to be stressed that the empirical findings were not so strong as to suggest that considering personality levels as separate entities is redundant. Rather than tight interrelations, associations between personality levels reflected a "federation" of constructs, which was also shown in the small size of the found effects. This federation leaves the possibility for a broad range of variation in the complexity of a person's actor-agent-author structure. For instance, people might be agreeable in their traits but might strive for economic and extrinsic success in their goals, while narrating a past colored by caring and love. The implications of this complexity and whether this leads to inner contradictions is a promising pathway for future studies, as is the reciprocal long-term development of all three personality levels.

The aims of Study 2 and its related pilot study were to elaborate on the nexus between the narrative identity approach and the study of romantic relationships. While the review article (Study 2) discussed the benefits and implications of a more widespread adoption of the narrative identity approach to the study of romantic relationships, the pilot study tested the RNI as a newly developed tool to assess both couple members' relationship narratives. In their theoretical and empirical implementation, the conclusions drawn from Study 2 and the RNI illustrate the usefulness of a narrative identity approach for the study of romantic relationships that likely offers insights into the meaning-based elements of romantic relationships: Narrative methodologies are apt to capture the affective meaning that lies in people's narrated relationship experiences. Thus, similar to whole lives (McAdams, 1995), romantic relationships bear the potential to be represented and studied through means of narrative processing.

As a future step, the coded narrative material can be used in statistical analyses with non-narrative data (e.g., personality measures). Here, it is important to underscore that the narrative identity approach is not seen as a replacement for non-narrative research paradigms. Rather, the

narrative methodologies can be used to complement other paradigms. For instance, the Relationship Assessment Scale (Hendrick, 1988) as a self-report inventory captures participants' responses to pre-defined items on a Likert scale (e.g., "How well does your partner meet your needs?" or "How good is your relationship compared to most?"). Although these scales enable the assessment of participants' overall satisfaction with their relationship, they might be less suitable with respect to providing insights into *why* people are more (or less) satisfied with their relationships, *what* led to this evaluation, and *how* they derive meaning out of their relationship experiences. The narrative identity approach offers a unique and valuable tool in the pursuit of connecting the experiences that couple members make with the meaning they derive thereof. As such, merging the narrative and non-narrative paradigms may lead to a deeper understanding of the development of romantic relationships.

6.2 Life-Span Perspective

The purpose of Study 3 was to position life goals—as a striving-related aspect of personality—in the context of adult development. The study's findings revealed that (a) goal-importance and goal-attainability domains mapped fairly well onto developmental tasks encountered in the respective life stage; (b) goal importance and goal attainability were reciprocally linked to each other with goal importance exhibiting a stronger and more robust effect on goal attainability than vice versa, which was largely independent of age; (c) goal attainability, compared to goal importance, had a more pronounced effect on later subjective well-being, and associations between life goals and domain-specific satisfaction reflected thematic links; effects that were largely independent of age. These findings suggest that life goals follow a given principle inasmuch as people prioritize certain life goals when they are embedded in a particular life stage. Furthermore, the largely age-independent bidirectionality between goal importance and goal attainability might help people exhibit high control over their development, supporting the dual-process framework of an assimilative and an accommodative mode (e.g., Brandtstädter & Rothermund, 2002; Brandtstädter, Wentura, & Rothermund, 1999): If people value a certain life goal as important, they invest more in this goal, which makes goal attainability more likely. In contrast, if a goal appears less attainable, people devalue the importance of this life goal. Finally, the largely age-independent finding that the attainability of intrinsic goals (rather than the importance of these goals) was beneficial for later well-being reflects the relevance of a person's feeling of control and perceived sphere of influence across adulthood: It has been argued that people are more satisfied if they feel they have an internal locus of control (Rotter, 1966), and that a greater feeling of goal attainability yields more opportunities for goal achievement (Brunstein, 1993). Put differently, if people have no perceived control over the attainability of their goals, they might likely be dissatisfied. This is also in line with theories of learned helplessness positing that the perceived loss of control over important goals is detrimental for well-being and a risk factor for depression (e.g., Abramson, Metalsky, & Alloy, 1989; Seligman, 1975). From the findings of Study 3, it is, so far, to conclude that the content of goals is sensitive to age, while the dynamic interplay between goal importance and goal attainability as well as goals' predictive power on later life outcomes are less sensitive to age. This implies that adults of any age set and adapt their life goals and, thus, actively shape their development as a person.

It was the purpose of Study 4 to test whether the Michelangelo phenomenon—as a prominent striving-related aspect of romantic relationships—generalizes across the adult life span. Findings from

this study revealed that although the two partner affirmative components of the Michelangelo phenomenon as well as the predictive effect of partner perceptual affirmation on relationship satisfaction were associated with age, the core of the framework, which is movement toward the ideal self, was independent of age. Older people were not more or less likely to move toward their ideal self, and the link between movement toward the ideal self and life satisfaction or relationship satisfaction was not shaped by age. Thus, the findings lead to the conclusion that movement toward the ideal self within romantic relationships is not a characteristic that is reserved for the young but instead takes place throughout adulthood and is positively linked to satisfaction—irrespective of age. These findings add to theories of successful aging, indicating that continued growth—an important feature of psychological well-being—occurs across the life course (Erikson, 1959; Ryff, 1995). It was previously argued that older adults either have limited opportunities for continued growth or ascribe less importance to personal growth (Ryff, 1995). Our findings, however, showed that older adults were aspiring to grow personally, were moving toward their ideal self through their romantic relationship, and benefited from this movement. Future research, however, needs to address whether personal development in late adulthood is a particular characteristic of romantic relationships or if it happens in other life domains as well. Socioemotional selectivity theory (Carstensen, 1991, 1995) and related research (e.g., Fredrickson & Carstensen, 1990) have shown that the perception of limited time leads to greater investment in close relationships. Thus, it could be that it is in close relationships that older adults experience the most powerful effects on their personal development, as this is the aspect of their life in which they invest the most. In the same sense, it has been argued that as people get older, their social network contracts (e.g., Wrzus et al., 2013), which makes their marriages become an even more important source of social support (Lang, 2000; Lang & Carstensen, 1994). Future research is encouraged to examine these and related open research questions in more detail.

6.3 Process-Based Perspective

It was the purpose of Study 5 to uncover whether daily emotional, cognitive, and behavioral relationship processes as well as their day-to-day variability contribute to explaining personality–relationship transactions in couples. Overall, our findings on selection and socialization effects in romantic couples dovetailed with results of previous research (e.g., Erol & Orth, 2017; Karney & Bradbury, 1995; Neyer & Asendorpf, 2001; Robins et al., 2002) while simultaneously expanding the understanding of the processes underlying these transactions: Individuals with interpersonal vulnerabilities (i.e., neuroticism, low self-esteem, insecure attachment) experienced lower levels of beneficial relationship processes and higher day-to-day variability over a period of 2 weeks. Their later relationship satisfaction, however, appeared to result from the occurrence of the relationship processes and not, as also expected, from the processes' variability. Similarly, individuals with lower relationship satisfaction experienced lower levels of and higher day-to-day variability of beneficial relationship processes. Again, it was the occurrence of these processes, not their variability, that explained participants' later interpersonal vulnerabilities.

One reason why variability did not play a significant role in explaining relationship satisfaction is that people with interpersonal vulnerabilities might have more variable conceptions of what constitutes a satisfying relationship, because they have already experienced ups and downs in their romantic relationship history. Contrary to the idea that only a stable relationship can be satisfying, as found, for

instance, among people with secure attachment (Girme et al., 2018), people with interpersonal vulnerabilities might have a higher tolerance for variability in their standards and expectations for a romantic relationship. These standards and expectations, in turn, reflect the bar that the daily life of a relationship should reach to be experienced as satisfying, potentially shaping the development of a relationship (Kurdek, 1992); a promising research path for future studies.

Overall, this study is unique in that it (1) offered insights into the daily processes that underlie both selection and socialization effects in romantic couples and (2) tested two types of mediating processes. These insights have implications for future research in that they provide a paradigmatic change in how to think about the antecedents and consequences of relationship dissatisfaction: Couple members who are dissatisfied in their romantic relationship tend to experience, on the one hand, more negative relationship processes, such as conflicts or hostile interaction strategies (e.g., Cramer, 2004; Donnellan et al., 2007). On the other hand, as shown in the present study and related research, couple members who are dissatisfied are also less likely to experience and to benefit from potential positive relationship experiences. Together, this constitutes a breeding ground for lower relationship satisfaction, which in turn produces more negative and fewer positive relationship experiences, potentially leading to a vicious circle that has ramifications for individuals' relationships and their personalities. Understanding the underlying processes that drive this loop can become the starting point for actively and volitionally changing these processes, for instance, through intervening against the deteriorating processes and through re-building and re-activating the beneficial processes, processes that have been shown to underlie personality development (e.g., Finn, Mitte, Neyer, 2015; Wrzus & Roberts, 2017) and to be a key mechanism for personality–relationship transactions.

6.4 Strengths and Limitations

The present dissertation has strengths and limitations. From a theoretical angle, it is a strength that personality was conceptualized in broad terms, that is, as dispositional traits, characteristic adaptations, and life narratives (McAdams & Pals, 2006). This broad conceptualization allowed, in Study 1, to apply an integrative perspective on personality and, in Study 5, to apply a more nuanced investigation of the transactional effects between couple members' personalities (traits and characteristic adaptations) and their romantic relationships. Second, to arrive at a holistic view of both personality and romantic relationships, oral life story interviews (Study 1) as well as oral relationship narrative interviews (Study 2; pilot study) were assessed. In doing so, Study 1 included both narrative and longitudinal data with the aim of integrating strands of personality research that have often been examined in parallel. From a methodological angle, and referring to the previous point, Studies 1, 3, and 5 spanned across multiple measurement occasions, allowing insights into the longitudinal interplay between the variables of interest. Another strength of this dissertation is the inclusion of large and diverse samples (Studies 1, 3, 4, and 5): Participants came from both a student community and a broader community, reflecting a relatively heterogeneous sample in terms of age, relationship duration, civil and parental status, and occupational status. Finally, Study 5 included both couple members in the analysis, accounting for their theoretical and methodological interdependence.

Despite these strengths, certain limitations need to be addressed. First, even though the samples were large and heterogeneous, they were convenience samples, reflecting rather satisfied individuals and, relevant for Studies 3 and 4, rather cognitively fit older adults. In addition, given that

Study 5 was an Internet-based investigation, participants were required to have a certain level of computer expertise, potentially having limited the samples in terms of age or computer literacy (Poynton, 2005). In a similar vein, people from different cultural, socioeconomic, and educational backgrounds might have evaluated the variables of interest (e.g., life goals) differently (e.g., Markus & Kitayama, 1991). Second, in the life-span approach, we cannot preclude that our findings would be better explained by cohort than age (e.g., Grob, Krings, & Bangerter, 2001; Staudinger & Bluck, 2001). Third, as by definition, the pilot study had a decidedly small sample. This means that further studies with larger and more diverse samples are needed to support the usefulness of the RNI. Fourth, the presented studies relied exclusively on self-report measures. Future research would benefit from including multimethod approaches by gathering additional information, such as observational data, other-reports, or objective major life events and combining these data with self-reports. Fifth, except for Study 5, it was beyond the scope of the presented studies to answer questions pertaining to explanatory mechanisms. In each of the studies, investigating the processes behind the associations would likely provide further insights into the dynamics of personality and romantic relationships.

6.5 Conclusion and Future Pathways

This dissertation takes a three-fold perspective on the self in romantic relationships: Personality and relationships assessed as autobiographical stories (i.e., narrative identity perspective), across age (i.e., life-span perspective), and on a day-to-day level (i.e., process-based perspective). Common to each of these three perspectives is their emphasis on a dynamic component: Stories evolve and change over time; age entails developmental processes that emerge and change within a given life period; and relationship processes are evolving and changing within and across one's daily life. Emphasizing the dynamic and developmental character inherent in each of the perspectives applied, the findings from this dissertation dovetail with the notion that the psychological self is not only the producer of one's own development, but also the product of this development (Brandtstädter, 1998; Brandtstädter & Lerner, 1999) as well as a co-producer of one's own (Featherman & Lerner, 1985) and one's close other's development.

Each of the presented research perspectives has added a valuable piece to the puzzle of understanding the self in romantic relationships; jointly, they offer a nuanced definition of a romantic relationship: a personality-based, dyadic, and multi-faceted process of micro-interactions that lead to micro-narratives, which lead to subsequent interactions and macro-narratives, together shaping the development of people's personality and their relationships. However, to keep the analogy of a puzzle, a more holistic picture is gained if all the pieces are brought together. To that aim, future research might (a) capture people's life narratives and relationship narratives at multiple measurement occasions in order to track stability and change in these narratives, (b) include couple members of different ages, and (c) examine a nuanced consideration of the day-to-day (or even situation-to-situation) processes that couple members individually and commonly experience in their daily life. Connecting personality data with narrative and process-based data in an age-heterogeneous sample offers insights into how people derive meaning from their daily experiences across adulthood. In its entirety, this combined perspective fully reflects the self in romantic relationships and, finally, leads to further understanding how "we, changing, continue to love a changed person" (Maugham, 1938; p. 306).

7. References

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APPENDIX A: Study 1

Getting Along and Getting Ahead as Actor, Agent, and Author:
A Three-Layered Personality Perspective in the Light of Master Motives

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Abstract

People differ in their inclination for getting along (e.g., social acceptance) and getting ahead (e.g., status). With the aim of better understanding how these two master motives are expressed within the psychological self, we applied an integrative actor–agent–author perspective and expected concurrent and longitudinal thematic interconnections between the actor (i.e., traits), agent (i.e., life goals), and author (i.e., narrative themes). To that aim, 141 participants ages 14 to 68 years ($M = 35.40$) completed self-reports on their traits and goals at the beginning and end of a 2-year study interval. In between these assessments, participants took part in an oral life story interview. As predicted, findings indicated that traits, goals, and narrative themes were thematically related to each other in that getting along, getting ahead, and a compound of both motives served as a helpful lens to interpret these interrelations. Implications are discussed in view of personality integration.

Keywords. Psychological self; life narratives; master motives; integrative personality framework; personality integration

Introduction

Every human being is a small family. — Novalis (1772–1801)

Who am I? Philosophers have debated this existential issue for at least the last 2,000 years (Taylor, 1989). Yet, the search for answers to this question has not come to a halt. In fact, interest in understanding the nature of the psychological self has continued to the present day: People are eager to understand who they are (Van Hoof & Raaijmakers, 2002) and researchers are motivated to assess personality as comprehensively as possible.

For a long time, personality features within the psychological self (e.g., personality traits, life goals) were studied in isolation from each other, which underscored their distinctiveness. More recently, however, the interrelatedness of personality features has received more and more research attention, demonstrating that, for instance, traits and goals are not simply byproducts of each other and cannot be reduced to one another but rather represent related constructs within the psychological self (Bleidorn et al., 2010; Winter, John, Stewart, Klohnen, & Duncan, 1998). A theoretical framework that accentuates both the distinctiveness and the interrelatedness of personality features is the integrative framework for studying people (McAdams, 2015a, 2015b; McAdams & Olson, 2010; McAdams & Pals, 2006). According to this framework, human personality is expressed across three levels, which conflate in three different psychological standpoints from which people may understand themselves (McAdams, 2013): (1) A social actor (expressed as traits and social roles), (2) a motivated agent (expressed as goals, values, and other characteristic adaptations), and (3) an autobiographical author (expressed as life narratives).

In the present study, we built on this tripartite, integrative actor-agent-author view on personality and examined empirical associations between the actor (expressed as personality traits), the agent (expressed as characteristic life goals), and the author (expressed as motivational narrative themes). We expected *getting along* and *getting ahead* (Hogan & Roberts, 2000) to provide a suitable frame to organize these interrelations, that is, to organize how people think they are, what they strive for, and how they narrate their life.

Integrative Framework of Personality

According to the above introduced integrative framework of personality (McAdams, 2015a, 2015b; McAdams & Olson, 2010; McAdams & Pals, 2006), a person can be understood from three distinct, albeit complementary, standpoints.

First, the self as a *social actor* encompasses semantic representations of dispositional traits, skills, social roles, and other repeated actions on the social stage of life (McAdams, 2013; McAdams & Pals, 2006). These dispositional traits reflect relatively stable foundational consistencies in thoughts, feelings, and behaviors that distinguish people from one another (Costa & McCrae, 1994; Roberts & DelVecchio, 2000). The most common taxonomy for these traits is the five-factor theory of personality, subsuming agreeableness, extraversion, conscientiousness, openness to experience, and neuroticism as Big Five personality traits (John & Srivastava, 1999; McCrae & Costa, 1987).

Second, the framework suggests that the subjective “I” as a social actor understands the “Me” to be a *motivated agent* that holds characteristic adaptations projected into the future (James, 1892/1963; McAdams, 2013; McAdams & Pals, 2006). These characteristic adaptations address

motivational, social-cognitive, and developmental concerns, including a range of motives, goals, values, and aspirations (e.g., Little, 1999) that are contextualized in time and place and with respect to a specific social role (McAdams, 1996). In our study, we focus on goals as one type of characteristic adaptation, and specifically on major life goals. Major life goals, compared to midlevel goals, have greater generalizability and reflect overall goals that people strive for in their lives, such as having a family or pursuing a career, compared to having a date with someone or getting an excellent grade in an exam (Austin & Vancouver, 1996; Bleidorn et al., 2010). Given that major life goals point to how individuals want to build their lives in general, they have an impact over years and decades rather than hours, days, or weeks (Roberts, O'Donnell, & Robins, 2004). Consequently, major life goals represent one of those characteristic adaptations that most closely correspond to dispositional-trait dimensions with regard to their breadth and stability and are therefore suitable for studying interrelations between traits and goals (Roberts et al., 2004) and, as we argue, for studying interrelations between traits, goals, and narratives.

Third, the self as an *autobiographical author* forms life narratives within the “Me”, shaping the reconstructed past, present, and presumed future into a coherent storyline (McAdams, 2013; McAdams & Pals, 2006). In late adolescence and early adulthood, people begin to build these internalized life narratives to establish unity, purpose, and meaning in their lives (Habermas & Bluck, 2000; McAdams & McLean, 2013). As such, life narratives reflect “the most distinctive and unique aspect of the person” (Dunlop, 2015, p. 312). In the present study, we focus on motivational narrative themes as one of four prominent categories in the field of narrative identity research (for a detailed overview of the four categories, see Adler, Lodi-Smith, Philippe, & Houle, 2016). Operationalized in terms of communion and agency, motivational narrative themes reflect what the narrator has longed for in the past or is currently seeking (Bakan, 1966; McAdams, 2010a). While communal narratives reflect stories colored by social belongingness and connectedness, agentic narratives reflect stories of self-assertion and self-expansion (Adler et al., 2016; Bakan, 1966; McAdams, 2010a).

As might be discerned from the above, there is a theoretical distinction between the actor, agent, and author, which implies that traits, goals, and narratives are conceptually different from each other. Whereas traits represent relatively stable and consistent patterns of people’s behaving and feeling (Costa & McCrae, 1994), goals are future-oriented representations of what people want to achieve in their lives (Bleidorn et al., 2010), and narratives are representations of personal pasts, presents, and anticipated futures, as represented within story-based frameworks (McAdams, 2013). While personality traits reflect what has been described as the “having” side of personality and goals can be seen as the “doing” side of personality (Allport, 1937; Cantor, 1990), life narratives can, following this logic, be understood as the “being” side of personality. Despite their conceptual difference and distinct signature, they have in common that they are all embedded within the person and, hence, illustrate a unique feature through which that person can express him- or herself. Foregrounding that people have to connect their having, doing, and being sides, it is reasonable to assume that there are meaningful thematic interrelations between traits, goals, and narratives.

Interrelations Between Personality Levels

When suggesting his integrative framework of personality, McAdams (1996) “proposed that an adequate description of the person requires...the delineation of three relatively independent, non-

overlapping levels on which the person can be described” (p. 301). While still highlighting the three levels’ “own geography” (McAdams, 1995, p. 365), McAdams adapted the clear distinction between personality levels in his later work and suggested interrelations between them (McAdams & Pals, 2006). According to this reasoning, people are born with a certain temperamental disposition that evokes particular goals and values; these goals and values, in turn, are likely to lead one to environments that fit and strengthen the individual’s innate dispositions (Roberts & Caspi, 2003). These proactive person–environment transactions are thought to also be embedded in the narratives that people tell (Bauer & McAdams, 2004; McAdams, 1982, 1988). It is to assume that—based on their traits and goals—people are more or less inclined to construe a certain life story; this story, in turn, is thought to feed back into how people perceive their social world, act as actors and strive as agents (e.g., Bauer & McAdams, 2004; McAdams, 2001).

Most previous research on interrelations within the psychological self has focused on associations between two of the three personality levels. Sorted according to the five personality traits, the following interrelations have been found: People high in *agreeableness* are described as gentle, good-natured, compliant, and cooperative, which are characteristics that facilitate bonding, harmonizing with others, and having concerns for close others (John & Srivastava, 1999). It has been shown that people high in agreeableness strive for social and relational goals as well as for tradition, benevolence, and conformity values (Bleidorn et al., 2010; Roccas, Sagiv, Schwartz, & Knafo, 2002). Agreeable people are also inclined to report narratives that include communion expressed in narrated episodes of friendship and caring for other people (McAdams et al., 2004). People who report these communal narratives and social life stories are also likely to strive for intimacy and social goals (McAdams, 1982, 1988).

People high in *extraversion* are described as talkative, sociable, assertive, and active, which are attributes that facilitate achievement goals (John & Srivastava, 1999). They are inclined to hold values of achievement, hedonism, and stimulation, as well as to strive for power, novelty, excitement, community, health, relationship, personal growth, and hedonism (Lüdtke, Trautwen, & Husemann, 2009; Roccas et al., 2002). People who strive for achievement and power are also likely to narrate agentic life stories (e.g., McAdams, 1988, 1996; Woike & Polo, 2001). Extraverted individuals are also likely to report intrinsic memories and episodes of humanistic pursuits, which are episodes of personal growth, establishing significant relationships, and contributing to society (Bauer, McAdams, & Sakaeda, 2005; Deci & Ryan, 2000).

At the same time, achievement implies a certain degree of self-control and persistence— aspects that are expressed among people high in *conscientiousness* (John & Srivastava, 1999). People high in conscientiousness are characterized as being thorough, organized, and responsible (Hogan & Ones, 1997) and are likely to strive for achievement and power as well as for conformity and security, aspects that help these people maintain the status quo and build structure and stability (Bauer et al., 2005). It has been predicted that people high in conscientiousness would report agentic narratives (McAdams et al., 2004), but so far, no support has been found for this hypothesis.

People high in *openness to experience* are described as having a preference for novelty, variety, intense experience, and complexity (McCrae, 1996). This tendency is expressed in striving for diversity, change, and intellectual and emotional autonomy (Roberts et al., 2004) as well as in

hedonistic goals, aesthetic goals, universalism, self-direction, and stimulation values (Roccas et al., 2002). So far, it is not known whether people high in openness to experience are more or less likely to report narrative themes of agency or communion.

Finally, people high in *neuroticism* are likely to be worried, anxious, and susceptible to negative affect (Costa & McCrae, 1992). It has consistently been shown that neuroticism is unrelated to any life-goal domain (e.g., Roberts et al., 2004; Roberts & Robins, 2000), possibly because most goal domains reflect an inherent approach motivation, which is less present in people high in neuroticism (Gomez, Allemand, & Grob, 2012; Watson & Clark, 1992). Furthermore, people high in neuroticism are less likely to narrate intrinsic memories, which are concerns that deal with pursuits of personal growth, fostering meaningful relationships, and contributing to society (Bauer et al., 2005; Deci & Ryan, 2000). However, so far, it is not known whether people high in neuroticism are more or less likely to report narrative themes of agency or communion.

Overall, these findings already allude to meaningful associations between personality levels. To more thoroughly extract interrelations between two of these personality levels, Roberts and Robins (2000) factor analyzed across the Big Five traits and major life goals and revealed two overarching patterns: Getting along, in which agreeableness was positively linked to social goals, and getting ahead, in which extraversion and conscientiousness were positively related to economic goals. Representing two pivotal sources of human striving, getting along and getting ahead are embedded in the (neo)socioanalytic model (Hogan & Roberts, 2000). According to this model, people differ with regard to their inclination to pursue the overarching goals of acceptance and/or status, reflected in the master motives of getting along and getting ahead: Getting along, on the one hand, maps onto a desire for social acceptance and approval (Hogan & Roberts, 2000), refers to the ability to relinquish individuality through participating in larger social networks, and manifests in striving for community, social relationships, intimacy, or altruism (Abele & Wojciszke, 2014; Digman, 1997; Rank, 1945; Sheldon & Cooper, 2008). Getting ahead, on the other hand, reflects a desire for status, power, and control of resources (Hogan & Roberts, 2000), refers to the capacity to deal with the environment as a separate individual unit, and manifests in goal pursuit as well as in striving for power, fame, or self-expansion (Rank, 1945; Sheldon & Cooper, 2008).¹

Additional to interrelations between two personality levels, few studies have explored the interrelations between all three personality levels, with the following exceptions: Studies have shown how personality levels are linked to each other within specific subgroups, such as in the case of gay and lesbian individuals' traits, goals, and narratives (McAdams, 2005), and in the area of career counseling with respect to traits, goals, and narratives related to the work domain (Savickas, 2011). We are aware of only one study that provided evidence for a general overarching theme within McAdams's integrative framework (Manczak, Zapat-Gietl, & McAdams, 2014). Applying the regulatory focus theory (Higgins, 1997), the authors found that traits, personal goals, and narratives cohered around the themes of prevention and promotion among 163 middle-aged adults ages 55 to 57 years. However, as the authors themselves conceded, one limitation of their study is that it assessed specific

¹ Here, it should be noted that other researchers have suggested similar motives/needs with different naming (e.g., Bakan, 1996; Saucier & Goldberg, 1996), all referring to an overarching motivational structure of social involvement on the one hand and power on the other hand.

personal goals instead of far-reaching life goals. Personal goals motivate immediate tasks that neither reflect the same depth nor cover the same periods as traits or narratives (Manczak et al., 2014), which makes the adoption of more far-reaching life goals in the context of an integrative actor-agent-author perspective important. In addition, although their data were gathered in a longitudinal study design, it was not tested how personality levels predicted each other over time and it remains open to be seen how the interrelations are expressed in a more age-heterogenous sample.

Overall, to broaden the comprehension of the interrelations between personality levels, we consider it important to examine how traits, goals, and narratives are related to each other (1) with the adoption of more far-reaching life goals, (2) within a longitudinal time frame, and (3) in an age-heterogenous sample. The notion of longitudinal associations between personality levels is relevant given that previous theoretical assumptions divaricate regarding the temporal relations between personality levels. The five-factor theory of personality postulates that traits predict characteristic adaptations and that characteristic adaptations can be understood as an expression of more stable traits, but that characteristic adaptations do not shape traits (McCrae & Costa, 2008). In contrast, the integrative framework of personality (McAdams & Pals, 2006) as well as the (neo)socioanalytic model (Roberts & Wood, 2006) consider personality features as reciprocally interconnected. It is one aim of the present study to provide knowledge on whether the theoretical assumptions of reciprocity can be substantiated with longitudinal data.

The Present Study

The delineation of the self into an actor, agent, and author has suggested a new theoretical approach for understanding personality, but more evidence is needed to uncover how features of these three levels empirically relate to one another. We suggest that the actor's traits, the agent's life goals, and the author's narrative themes share interrelations that can be meaningfully interpreted in the light of getting along and getting ahead. We build on previous research indicating that highly agreeable people are more likely to orient themselves around communal goals, which reflect getting along, whereas highly extraverted and conscientious people pursue agentic goals, which reflect getting ahead (e.g., Roberts & Robins, 2000). Adding the third personality level—life narratives—into this reasoning, we see communal life stories (i.e., stories of caring, love, and friendship) included within the motive of getting along expressed among people with high scores in agreeableness and communal goals, while agentic life (i.e., stories of self-master, independence, and power), would be embedded in the motive of getting ahead expressed among people with high scores in extraversion and conscientiousness and agentic goals.

To summarize, we expected to uncover (1) getting along to be manifested in empirical associations between agreeableness, communal life goals (i.e., family, relationship, community, and generativity goals), and communal life narratives, and (2) getting ahead to be manifested in empirical associations between the traits of extraversion and conscientiousness, agentic life goals (i.e., personal growth, fame, wealth, image, and work goals), and agentic life narratives. Given the sparsity of findings regarding getting-along and getting-ahead motives for openness to experience and neuroticism, we had no explicit hypotheses for these traits. Yet, to shed light on these traits' interrelations with life goals and motivational narrative themes we included them in the subsequent analyses.

To study the interrelations between traits, goals, and narratives, we tested the predictive associations between these variables: We tested whether (1) traits are systematically predicted by goals and narratives, (2) goals are systematically predicted by traits and narratives, and (3) narratives are systematically predicted traits and goals. Our hypotheses were as follows:

Hypothesis 1: Traits are predicted by goals and narratives in that (i) agreeableness is predicted by communal goals and communal narratives; (ii) extraversion is predicted by agentic goals and agentic narratives; and (iii) conscientiousness is predicted by agentic goals and agentic narratives.

Hypothesis 2: Goals are predicted by traits and narratives in that (i) communal goals are predicted by agreeableness and communal narratives; and (ii) agentic goals are predicted by extraversion, conscientiousness, and agentic narratives.

Hypothesis 3: Narratives are predicted by traits and goals in that (i) communal narratives are predicted by agreeableness and communal goals; and (ii) agentic narratives are predicted by extraversion, conscientiousness, and agentic goals.

To illuminate the reciprocity between these interrelations, we tested them from a longitudinal perspective in addition to a concurrent perspective. Taken together, our data provided us with the rare opportunity to reveal interrelations between personality levels and to investigate how features of each level predict each other. By following this approach, we sought to extend research on personality in two ways. First, the present study is unique in that it focused on interrelations between aspects of all three personality levels that are comparable in their conceptual depth (e.g., variables that refer to years and months rather than weeks, days, or hours). Second, this study included both longitudinal and narrative data with the aim of integrating strands of personality research that have often been examined in parallel.

Method

Sample and General Procedure

Data originated from the longitudinal Co-Development in Personality (CoDiP)² study that was conducted in German-speaking regions of Switzerland. Approval for the CoDiP study was received from the regional ethics committee of Basel (approval number: 175/09). Necessary supplemental materials (i.e., overview of study variables and data analysis script) are stored at a public and open-access repository (accessible through the following OSF link: <https://osf.io/ajtyp/>). Data for the present investigation covered the first two measurement occasions of the study (referred to as Time 1 and Time 2), which were 2 years apart. At both occasions, participants provided self-reports on their personality traits and major life goals. From a total sample of 1,050 participants, a randomly assigned sample of 184 individuals took part in an oral life story interview that was conducted between Time 1 and Time 2, referred to as the narrative measurement occasion ($T_{\text{Life Story Interview}}$). We compared individuals who took part in the interview (narrative sample) to those who did not participate in the interview (overall sample). Participants from the narrative sample, compared to participants from the overall sample, were significantly younger ($M = 35.10$ years vs. $M = 42.48$ years), $t(1042) = -4.08$, $p < .001$, indicated lower scores in conscientiousness at Time 1 ($M = 2.76$ vs. $M = 3.86$), $t(1043) = -2.10$, p

² Thirteen published papers are based on data from this research project, but none of these papers has investigated the narrative measures.

= .04, lower scores in conscientiousness at Time 2 ($M = 2.79$ vs. $M = 2.19$), $t(710) = -2.39$, $p = .02$, and higher scores in agreeableness at Time 2 ($M = 3.79$ vs. $M = 3.93$), $t(710) = 2.46$, $p = .02$. They also rated health goals as less important at Time 1 ($M = 3.58$ vs. $M = 3.64$), $t(1042) = -2.12$, $p = .04$, and prosocial-engagement goals as less important at Time 2 ($M = 3.01$ vs. $M = 3.11$), $t(714) = -2.25$, $p = .03$. No other differences were statistically significant (all $ps \geq .05$).

Given that we were interested in longitudinal associations between self-report measures (i.e., personality traits and life goals) and narrative measures, we focused on those participants from the narrative sample who completed the self-report surveys at Time 1 and Time 2 as well as the interview. A total sample of 141 participants resulted, which became our final longitudinal narrative sample. We compared participants from this sample to participants from the entire narrative sample (i.e., participants who did not complete both self-report surveys at Time 1 and Time 2). People from the longitudinal narrative sample were more likely to report communion in their life story interview ($M = 2.79$ vs. $M = 2.19$), $t(181) = 2.69$, $p = .01$, and had lower scores in openness to experience at Time 1 ($M = 3.71$ vs. $M = 3.91$), $t(180) = -2.13$, $p = .03$. No other differences were statistically significant (all $ps \geq .05$).

Participants from our final longitudinal narrative sample were aged 14–68 years³ at Time 1 ($M = 35.40$ years, $SD = 15.81$) with 66% identifying themselves as female and 34% as male. Most participants were Swiss (89.7%), 3.5% were German, 2.8% Italian, and 0.7% indicated having another nationality. Half of the participants were working, either full time (19.9%) or part time (24.8%); 47.5% were students, and 7.8% were not actively involved in the labor market. On average, participants had a monthly household income of 11,160.48 Swiss francs (U.S. dollars: 12,313.30; reference date at participation in the study in February 2014; 1 Swiss franc. 1.03 U.S. dollars),⁴ which is more than the average Swiss monthly household income of 7,112 Swiss francs (U.S. dollars: 7,625). Half of the participants (51.1%) were either single or unmarried, 40.4% were married, and 8.5% were separated, divorced, or widowed. Half of the participants had children (51.1%), while the other half indicated having no children (48.9%).

Measures

Personality traits. Dispositional traits were assessed with the German version of the Big Five Inventory (John & Srivastava, 1999; Lang, Lüdtkke, & Asendorpf, 2001). The 45-item self-report scale measures the Big Five traits of extraversion (8 items), neuroticism (8 items), conscientiousness (9 items), agreeableness (10 items), and openness to experience (10 items). For each item, the participants rated the extent to which they agreed with statements ascribed to themselves (e.g., “I see myself as someone who is talkative”). Items were rated on a 5-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach’s alphas indicated acceptable to good internal consistencies (from $\alpha = .70$ for agreeableness to $\alpha = .88$ for neuroticism).

Importance of life goals. Life goals were assessed with an adaptation of the German version of the Aspiration Index (Kasser & Ryan, 1996; Klusmann, Trautwein, & Lüdtkke, 2005). The index

³ From a developmental perspective, it is argued that the self as author (i.e., life narratives) emerges in adolescence and emerging adulthood, that is, at age 15–25 years (McAdams, 2013). All participants were age 15 and older at the time of the life story interview.

⁴ Young participants who were living in their parents’ home indicated their family household income.

assesses individuals' aspirations and measures the degree to which individuals value the importance of seven broad life-goal domains. The domains' contents cover four intrinsic aspirations (i.e., personal growth, meaningful relationships, community contribution, health) and three extrinsic aspirations (i.e., wealth, fame, image; Kasser & Ryan, 1996). In addition to the original seven domain contents, we also assessed life goals with regard to family, work, and generativity with four items for each domain (e.g., "to have an intact family life" for family goals, "to be successful in a job" for work goals, "to engage in general welfare" for generativity goals). Participants were asked to rate the importance of each life goal according to its relevance on a scale of 1 (*not at all important*) to 4 (*very important*). Cronbach's alpha suggested acceptable to good internal consistencies (from $\alpha = .69$ for relationship goals to $\alpha = .84$ for image goals) with one exception: Personal-growth goals indicated poor to unacceptable internal consistencies at both measurement occasions ($\alpha = .43$ at Time 1 and $\alpha = .49$ at Time 2).

Factor analysis across life goals. To reduce the number of life goals and to extract higher order patterns that illustrate the relations among the goal variables, we applied exploratory factor analysis at Time 1 and Time 2. Given its poor to unacceptable internal consistency ($\alpha < .50$), we had to exclude personal-growth goals from these and subsequent analyses.⁵ Factors were treated as orthogonal (i.e., varimax rotation). For both measurement occasions, Kaiser's (1960) eigenvalue-greater-than-one rule suggested two factors, Cattell's (1966) scree plot suggested four factors, and parallel analysis suggested three factors. Goodness-of-fit indices were examined with the fit indices of the Tucker Lewis Index (TLI) and the root mean square error of approximation (RMSEA). The model is considered to fit the data well if TLI is above .95 and RMSEA is below .08 (Schermelell-Engel, Moosbrugger, & Müller, 2003). First, we examined the goodness-of-fit indices for the two-factor solution. Because the RMSEA indicated a poor model fit of this structure (RMSEA = 0.12 at Time 1 and RMSEA = 0.11 at Time 2), this model was not chosen (e.g., Steiger, 2000). Next, we examined the goodness-of-fit indices for the four-factor solution. Although the RMSEA suggested a good model fit at both measurement occasions (RMSEA < 0.05), the Tucker Lewis Index (TLI) indicated an overfitting of the model (TLI > 1.00) at both occasions. Thus, the four-factor solution was not chosen. Instead, we decided on the three-factor solution obtained from the parallel analysis, which suggested adequate fit indices for Time 1 (RMSEA = 0.06; TLI = .93) and Time 2 (RMSEA = 0.06; TLI = .93).

Table 1 presents the standardized loadings extracted from the factor analysis at Time 1 and Time 2. In both three-factor structures, we interpreted Factor 1 (i.e., fame, wealth, image, and work goals) as *agentic goals*, Factor 2 (i.e., community and generativity goals) as *communal social-engagement goals*, and Factor 3 (i.e., relationships, family, and health goals) as *communal relationship and health goals*. For the factorial goal structure at Time 1, Factor 1 explained 18%, Factor 2 explained 15%, and Factor 3 explained 14% of the variance. Together, these three factors explained 47% of the total variance. For the factorial goal structure at Time 2, Factor 1 explained 17%, Factor 2 explained 17%, and Factor 3 explained 16% of the variance. Together, the three factors

⁵ Independent of whether we included personal-growth goals prior to conducting the factor analyses, the same factor structure emerged for the other goal domains. If we ran the analyses with personal-growth goals included, personal-growth goals loaded on Factor 2 (.44) and Factor 3 (.35) at Time 1 and on Factor 1 (.41) and Factor 3 (.42) at Time 2.

explained 50% of the total variance. For all subsequent analyses, we used these three life-goal factors.

Life story interview. Life story interviews were based on McAdams's (2008) Life Story Interview and were conducted orally, lasting between 1 and 2 h. A total of 11 interviewers (PhD and master's students) were trained to conduct these interviews and visited participants in their homes or interviewed them in the laboratory. During the interview, participants were asked to divide their life into two to seven chapters, to name the headings of these chapters, and to give a summary for each chapter. Further, participants were asked to report key scenes of their life (i.e., high point, low point, and turning point) that reflected significant episodes in their life story that were situated in time, place, and context and contained particular characters and their actions (McAdams, 2010a). For each scene, participants were asked to describe in detail what happened, where and when it occurred, who was involved and what this episode said about them as a person. Further, participants were asked to develop a future script, report life challenges, express their personal ideology, report on their co-development with a close person, reflect on a life theme, and report three important aspirations. For coding purposes, participants agreed that their interviews could be audio-recorded.

Coding Narrative Themes

We drew on previous research (e.g., Adler et al., 2016) and operationalized the motivational quality of participants' life stories in terms of agency and communion. Eight trained coders (three PhD students and four master's students) who were blind to identifying information of the participants (e.g., names, date of birth) and to the hypotheses of the study and who did not conduct the interviews themselves coded all the interview material. Both communion and agency were coded using the presence (1)/absence (0) system introduced in McAdams's coding guidelines (1998, 1999). While communion covers psychological ideas concerning love, friendship, intimacy, sharing, belonging, affiliation, union, and nurturance, agency encompasses psychological ideas regarding the concepts of strength, power, expansion, mastery, control, dominance, autonomy, separation, and independence (McAdams, 2010a). To be as precise as possible in coding, coders were trained to rate the interviews with respect to four agency subthemes and four communion subthemes (for a detailed description of the coding subcategories, see Supplemental Tables S1 and S2). Ratings of agency and communion were then averaged, resulting in single scores for agency and communion, respectively, for each participant. In the interest of establishing the degree of interrater reliability, a secondary coder rated a total of 15% of the interviews, resulting in good reliability indices for agency (86.9% agreement, Cohen's $\kappa = .44$) and communion (87.7% agreement, Cohen's $\kappa = .48$; Cicchetti, 1994).

Data Analytic Approach

To uncover whether traits, goals, and narratives meaningfully predict each other over time, we applied linear regression analyses and tested (1) whether traits are predicted by goals and narratives; (2) whether goals are predicted by traits and narratives; and (3) whether narratives are predicted by traits and goals.⁶

⁶ For the reciprocal interplay between traits and goals, we also tested the predictive power of earlier traits on later goals when controlling for the stability of goals, as well as the predictive power of earlier goals on later traits when controlling for the stability of traits. The corresponding tables are shown in the Supplemental Tables S5, S6, and S7.

Given that some of the study's key variables were significantly related to age (see Supplemental Table S4) and given that men and women significantly differed on some of the study's key variables,⁷ we controlled in all analyses for age and gender. Missing values were handled with the maximum likelihood estimation approach. Correlation and linear regression analyses were conducted with the psych package for R (Revelle, 2017), and factor analyses were conducted with the lavaan package for R (Rosseel, 2012).

To test whether the obtained results are based on sufficiently high statistical power, we conducted post hoc power analyses with G*Power 3.1 for regression analyses (Faul, Erdfelder, Lang, & Buchner, 2007). We examined the power to detect small, medium, and large effects with a sample of 141 participants, an error probability of .05, and a maximum of eight predictors. The respective power to detect these effects was .74 for small effects, .99 for medium effects, and 1.00 for large effects. Thus, the current study was highly powered to detect large and medium effects and sufficiently powered to detect small effects.

Results

Descriptive Statistics of Key Variables

Table 2 shows the descriptive statistics for personality traits and life-goal factors for Time 1 and Time 2 as well as their stability indices; descriptive statistics for the single goal domains are shown in the Supplemental Material (Table S3). The mean for agency was 2.94 ($SD = 1.15$), and the mean for communion was 2.80 ($SD = 1.29$). As evident from Table 2, all traits and life-goal factors had a substantial rank-order stability between measurement occasions. In the case of mean-level differences, significant differences were observed for all three goal-factor domains, signifying small effects. Results showing Pearson correlations are provided in the Supplemental Material (Table S4).

Concurrent and Longitudinal Associations Between Traits, Goals, and Narratives

Traits predicted by goals and narratives. Tables 3 and 4 show the predictive effects of life goals and narrative themes on personality traits. We found significant associations for three traits: Agreeableness, conscientiousness, and openness to experience. First, agreeableness was negatively predicted by agentic goals and positively predicted by communal social-engagement goals. These associations were observed in both concurrent and longitudinal analyses. In the longitudinal analyses, we also found that later agreeableness was positively predicted by earlier communal narratives. When we controlled for the 2-year stability of agreeableness (Table S5), life-goal factors and communal narratives were no longer predictive (all $ps > .05$), but agentic narratives were a positive predictor of later agreeableness ($\beta = .12$, $p = .03$, 95% CI [0.01, 0.11]). Second, conscientiousness was positively predicted by communal relationship and health goals. These associations were observed in both

⁷ Women, compared to men, indicated significantly higher scores in neuroticism at Time 1 ($M = 2.85$ vs. $M = 3.41$), $t(112) = 3.48$, $p < .001$, higher scores in extraversion at Time 1 ($M = 3.67$ vs. $M = 3.33$), $t(97) = 2.55$, $p = .01$, higher scores in neuroticism at Time 2 ($M = 2.77$ vs. $M = 2.39$), $t(100) = 2.75$, $p = .01$, and higher scores in extraversion at Time 2 ($M = 3.67$ vs. $M = 2.35$), $t(88) = 2.33$, $p = .02$. Women, compared to men, also indicated higher scores in communal relationship and health goals at Time 1 ($M = 3.75$ vs. $M = 3.63$), $t(94) = 2.49$, $p = .01$, higher scores in communal social-engagement goals at Time 2 ($M = 3.08$ vs. $M = 2.88$), $t(90) = 2.49$, $p = .02$, and higher scores in communal relationship and health goals at Time 2 ($M = 3.73$ vs. $M = 3.53$), $t(78) = 3.93$, $p < .001$. Women and men did not differ in their narrative themes (all $ps > .05$).

concurrent and longitudinal analyses. When we controlled for the 2-year stability of conscientiousness (Table S5), no significant associations were observed (all $ps > .05$). Third, openness to experience was positively predicted by communal social-engagement goals. These associations were observed in both concurrent and longitudinal analyses. In the longitudinal analyses, we also found that openness to experience was positively predicted by earlier agentic narratives. When we controlled for the 2-year stability of openness (Table S6), no significant associations were observed (all $ps > .05$).

Goals predicted by traits and narratives. Table 5 shows the predictive effects of traits and narrative themes on life goals. We observed significant links for all three life-goal factors. First, agentic goals were negatively predicted by agreeableness and positively predicted by extraversion in the concurrent analysis. In the longitudinal analysis, agentic goals were negatively predicted by agreeableness, negatively predicted by communal narratives, and positively predicted by conscientiousness. When we controlled for the 2-year stability of agentic goals (Table S7), conscientiousness remained a significant predictor ($\beta = .12, p = .04, 95\% \text{ CI } [0.004, 0.15]$). Second, communal social-engagement goals were positively predicted by agreeableness, openness to experience, and neuroticism in the concurrent analysis. The predictive effect of openness to experience remained significant in the longitudinal analysis, while no significant effect emerged when we controlled for the 2-year stability of communal social-engagement goals (Table S7; all $ps > .05$). Third, communal relationship and health goals were positively predicted by conscientiousness—in the concurrent analysis, in the longitudinal analysis, and when controlled for the stability of communal relationship and health goals ($\beta = .17, p = .04, 95\% \text{ CI } [0.01, 0.14]$; Table S7).

Narratives predicted by traits and goals. Table 6 shows the predictive effects of traits and goals on narratives. We observed one significant effect, showing that agreeableness was a significant positive predictor of later communal narratives.

Discussion

Applying an integrative actor–agent–author perspective on personality, the present study revealed that the actor's traits, the agent's life goals, and the author's narratives show empirical associations. As presented in the following, these empirical interrelations can meaningfully be interpreted in the light of getting along and getting ahead as master motives. In addition, we observed that the interrelations between traits and goals as well as those between traits and narratives were reciprocal over a time span of 2 years; the association between goals and narratives were unidirectional: Earlier narratives predicted later goals, but earlier goals did not predict later narratives. From all the effects tested, the interrelations between traits and life goals were the most pronounced, which speaks for a strong connection between the social actor and the motivated agent.

Getting Along Across Personality Levels

For the motive of getting along, we hypothesized that agreeableness, communal life goals, and communal narratives would be meaningfully related to each other. Indeed, findings from the present study speak to thematic associations between these variables. That is, people high in agreeableness were more likely to narrate their life story 1 year later in a way that was colored by communion. People high in agreeableness and people who reported communal narratives were also less likely to strive for work, image, fame, and wealth goals (i.e., agentic goals). People high in agreeableness were rather likely to strive for community and generativity goals (i.e., communal social-

engagement goals), and people who rated these goals as important were more likely to be agreeable. These effects, however, emerged only when the stability of the respective outcome variable was not controlled for. This indicates that the predictive associations were not so strong as to suggest that they can predict variables from the other personality levels above and beyond the variable's stability effects.

To illustrate interrelations within the arc of master motives, throughout the rest of this section we provide a few participants' *single greatest* challenges as examples.⁸ Here, we provide a single greatest challenge of a participant who scored high in agreeableness and valued communal social-engagement goals. This person narrated the challenge in the following way:

Rearing children was the biggest challenge for me. So, if I was sick, she [my mother] would come and do the household chores. I had family and relatives, a lot of people who supported me—sometimes just by a call: "How are you?" I think that is very central to my life in general: That I have always found people from early childhood until now who have helped and supported me or were there if I needed them.

This quotation illustrates that how agreeable people are and what they strive for is also expressed in the way they narrate significant sequences of their lives: As episodes of love, community, and support. As such, empirical associations between agreeableness, communal life goals, and communal narrative themes can be interpreted as what has been called getting along (e.g., Abele & Wojciszke, 2014; Hogan & Roberts, 2000): A desire for social acceptance and approval, participation in larger social networks, and striving for community and social relationships, intimacy, or altruism. Following Manczak et al.'s (2014) description of their multi-layered analysis of traits, goals, and narratives from the perspective of promotion focus and prevention focus, we can add to the discussion that it is also from the perspective of getting along that traits, goals, and narratives meaningfully relate to each other.

Reasons for why agreeableness, communal life goals, and communal life narratives showed meaningful associations might be drawn from the theoretical assumptions of the proactive person–environment transactions (Roberts & Caspi, 2003). Considering that narratives layer over goals, and goals layer over traits (McAdams, 2015a, 2015b), the initial step of these transactions would lay in traits: People are born with a certain temperamental disposition that evokes particular goals, which, in turn, are likely to lead one to environments that fit and strengthen the innate dispositions. Applied to the present case, an agreeable person might likely strive for community goals, which, for instance, makes him or her more likely to get involved in community work. Being involved in and being dedicated to community work might, in turn, strengthen this person's agreeableness. Key scenes from the community work might also gradually evolve as internalized communal narratives in that person's life story, which provides him or her with meaning and identity (McAdams & Pals, 2006). Having such a communal narrative, in turn, strengthen his or her tendency to pursue communal goals and to be agreeable.

⁸ Narrative quotations were translated from German into English by the second author.

Getting Ahead Across Personality Levels

For the motive of getting ahead, we hypothesized that extraversion and conscientiousness would be meaningfully related to agentic life goals and agentic narratives. While we found no support for this hypothesis on the narrative level, we found support on the goal level. People high in extraversion were likely to report agentic life goals in the concurrent analysis, and people high in conscientiousness were likely to report agentic goals in the longitudinal analysis. In addition, people high in conscientiousness were concurrently and longitudinally likely to report communal relationship and health goals. The links between conscientiousness and these goals remained above and beyond the stability effect of these goals.

These findings partially support those of previous research, underscoring associations between extraversion, conscientiousness, and agentic goals (Bauer et al., 2005; Bleidorn et al., 2010; Hogan & Ones, 1997; Roberts & Robins, 2000). At the same time, participants of the present study who were high in conscientiousness were also likely to strive for goals of family, relationships, and health. Although not predicted in the scope of the present investigation, these associations align with previous research, showing links between conscientiousness and social relationships (Dyrenforth, Kashy, Donnellan, & Lucas, 2010; Hill, Turiano, Mroczek, & Roberts, 2012), as well as between conscientiousness and health (Bogg & Roberts, 2004).

With regard to overarching master motives, goals of family, relationships, and health might not fall under the umbrella of getting ahead at first glance, but they might still capture this motive, albeit in a different way: Goals of family, relationships, and health seem to reflect the need for structure, security, and stability, which would fall under the getting-ahead aspect of controlling resources (Hogan & Roberts, 2000, 2004).

The following quotation illustrates how a person who indicated high scores in extraversion, conscientiousness, agentic goals, and communal relationship and health goals narrated the single greatest challenge:

I am thinking about 10 years ago, when I saw my husband had another woman just to put pressure on me for sex. I said, now it's enough, I said, I don't want this anymore, now you have to go, and then he left. Afterward, [I thought] how do I do this: three children, a house, single parenting...? And my mother said to me: You will soon have a boyfriend again, you are a clean [person] (well, a beautiful [person], she means by that), and sociable, you will soon have a husband who helps you pay. Then I said no! [Laughs]. Let's leave men [out of it], I do not need them now at all, men.... Before, I couldn't do that alone, emotionally, especially with the kids, be financially alone, and be happy with myself.... These are my three things [kids, financial security, and happiness] that I give myself, that I want to achieve, before I re-enter into a relationship, just enter a relationship.... [If] someone pays me, no, then I will get into a dependency. I would never want that.

While the single greatest challenge of a person high in agreeableness with communal goals reflected getting along, the single greatest challenge of this person might highlight getting ahead—with a focus on self-reliance, stability, self-expansion, and the ability to assert oneself.

However, it needs to be mentioned that interrelations within the getting-ahead motive were less pronounced than expected (particularly for extraversion and for interrelations with the narrative level). We see at least two reasons for why this might have been the case. First, given that in the present study we needed to exclude personal-growth goals from the analyses because of unacceptable low internal consistency, our agentic goals were rather extrinsic than intrinsic in nature. This would possibly explain why associations between extraversion and agentic goals were less pronounced than expected.

In a similar vein, motivations for pursuing work goals—which clustered together with fame, image, and wealth in the agentic life-goal factor—are likely manifold. For some people, pursuing work goals may entail intrinsic fulfillment and nourishment of innate needs, such as competence and autonomy (Deci & Ryan, 2000). For others, work goals are closely related to economic security and stability, whereas some people might pursue work goals to receive extrinsic achievement, status, and power. The same dual nature might apply to agentic narratives with agency subsuming personal growth and self-mastery as well as victory and fame. This would possibly explain why we did not find significant associations between agentic narratives and extraversion or conscientiousness.

In sum, future research is needed to (1) more thoroughly assess personal-growth goals and (2) disentangle the twofold nature of agentic goals and agentic narratives in their association with extraversion and conscientiousness. We see it as plausible that a more nuanced goal and narrative assessment would yield distinct associations with traits and narratives, potentially supporting a more consistent, three-layered pattern of getting ahead

Getting Along and Getting Ahead Across Personality Levels

Given the sparsity of previous findings on interrelations of openness to experience and neuroticism with communal/agentic goals and communal/agentic narratives, we did not state hypotheses for these two traits, but we explored their interrelations in the present analyses. While we did not find any consistent relations between neuroticism, goals, and narratives, we found meaningful associations between openness to experience, life goals, and narrative themes. More specifically, the present findings have shown that people high in openness to experience were likely to report communal relationship and health goals in the concurrent analysis and were likely to report communal social-engagement goals in the longitudinal analysis. People who reported communal social-engagement goals were, in turn, more likely to have higher levels of openness to experience, both concurrently and longitudinally. In addition, levels of openness to experience were predicted by earlier agentic narratives. That is, people who narrated their life story in an agentic light were more likely to indicate higher scores in openness to experience 1 year later.

These findings lead us to see a dual pattern of communal goals (i.e., getting along) and agentic narratives (i.e., getting ahead) for the trait of openness to experience. These findings are in line with other research showing that people high in openness strive for social goals and for generativity (Cox, Wilt, Olson, & McAdams, 2010; Roberts & Robins, 2000) while simultaneously valuing self-direction and autonomy (Roccas et al., 2002). Previous research has also shown that communal social-engagement goals (e.g., generativity) reflect both agency and communion (Frimer, Walker, Dunlop, Lee, & Riches, 2010; Mansfield & McAdams, 1996; McAdams, 2010b), which further strengthens this pattern's dual nature.

Explanations for why participants high in openness to experience had this dual pattern might be found in the basic definition of this trait (e.g., McCrae & Costa, 1997). People high in openness are described as expressing an understanding for and a tolerance of other people, which likely coincides with these peoples' striving to attain community and generativity goals. At the same time, people high in openness are described as being intellectual, imaginative, and open-minded, which seems to be compatible with the motivational agenda of narrated self-direction and agency (John & Srivastava, 1999).

To illustrate this duality, we quote from the single greatest challenge of a participant who scored high in openness to experience and valued communal social-engagement goals:

The biggest challenge was also Singapore...to engage in something completely new and unknown. And just to know...I have to find a way to deal with the many new things. Then there was a bit less stability, on the whole. I think especially for me. The kids went to school.... And I had no place.... [Being] in a completely new place, to find [my] way, [to feel] reasonably well, I fell into a sort of limbo, so that was difficult. Although the intriguing thing about Singapore was, so we also went to a church there, somehow realizing that [the church] is the same all over the world. You can share your faith with Chinese, with Indians, with all kinds of people and that's where you meet with others.

The present interrelations among people high in openness to experience suggest that life goals and narratives had distinct underlying motives: Life goals were communal and narratives were agentic. But rather than leading to potential inner contradictions, this dual nature can also be a resource. Symbolically spoken, the agent and the author may serve different needs of a person. In their goals, people high in openness expressed support, an engagement in the community, and a care for the next generation (i.e., communal goals). In their narrative, people high in openness did not tell autobiographical stories of community, love, friendship, and conversations, which would embed communion on the narrative level. Instead, people high in openness told their life story in a manner that highlighted their own agency (i.e., agentic narratives). Given their explicit preference for variety and complexity (McCrae, 1996), it is plausible to assume that this twofold structure of getting-along goals and getting-ahead narratives is particularly present among people high in openness.

Master Motives Across Personality Levels

Delineating the psychological self into the actor, agent, and author is a helpful tool for synthesizing and structuring findings on personality (McAdams, 2013). However, we contend that progress in answering the question of "Who am I" results from piecing the actor, agent, and author together and studying interrelations between personality levels. In the present study, we applied an integrative actor-agent-author perspective on personality and demonstrated that master motives of getting along and getting ahead are suitable lenses for interpreting the associations between personality levels. We studied these associations in consideration of the developing configuration of the actor, agent, and author (McAdams, 2013) and examined predictive associations between traits, goals, and narratives from a longitudinal perspective.

It has been argued that the Me is a "big house" that subsumes a variety of goals (McAdams,

1996). On the basis of the present findings, we conclude that people with certain traits are more likely to reside in certain rooms of this house, pursuing trait-corresponding goals. More specifically, our research has shown that cooperative and amiable people were less likely to strive for work, wealth, image, and fame, and were more likely to strive for community and generativity. Extraverted and, particularly, conscientious people valued agentic goals as well as family, close relationships, and health goals. Finally, people high in openness rated community and generativity as important. Not only were people with these traits more likely to endeavor to reach certain goals, but they were also more likely to narrate their life story in a way that corresponded to their traits and life goals. Cooperative and amiable people narrated their life story colored by communion, whereas narrating the life story colored by agency was related to higher levels of openness. Taken together, this study provided empirical evidence for thematic ties between traits, goals, and narratives, suggesting a differentiated perspective on personality within the arc of overarching master motives.

Three observations need to be taken into account when evaluating the empirical insights of this study. First, the results of the present investigation should not be taken to imply that individuals can be deemed getting-along or getting-ahead types, as this was not what this study examined and as this would oversimplify the complexity that is inherent in each individual's personality structure.

Second, even though getting along and getting ahead as master motives served as a meaningful lens to interpret the interrelations between personality levels, our findings have also shown that the master motives' dialectical principle might be too reductive to subsume multiple traits, goals, and narratives. This particularly applies to the trait openness in that interrelations with openness were best described as a compound of getting-along and getting-ahead motives.

Third, the empirical findings were not so strong as to suggest that considering the three levels as separate entities is redundant (McAdams & Pals, 2006). Rather than tight interrelations, associations between personality levels reflected a "federation" of constructs, which was also shown in the small size of the found effects. This federation leaves the possibility that people might still experience variation in their psychological self, leading to a complex actor-agent-author structure. For instance, people might be agreeable in their traits but might strive for economic and extrinsic success in their goals, while narrating the past colored by caring and love. The implications of this variety and whether this leads to inner contradictions is a promising pathway for future studies.

Strengths, Limitations, and Outlook

It is a strength that the present study included a community sample with participants aged 14 to 68 years, covering considerable parts of the life span. Moreover, traits and goals were assessed at two measurement occasions over 2 years, which allowed us to test for longitudinal associations. Further, instead of short-term aspirations, we focused on major life goals that depicted individuals' broad aspirations in life, which is a strength because the breadth and stability of life goals are comparable to those of dispositional traits (Roberts et al., 2004). To arrive at a more holistic view of personality, we collected oral life story interviews in addition to traits and life goals. That is, assessing people as authors additional to understanding them as actors and agents enabled us to examine associations between three levels of personality.

The results of this research should also be interpreted with some caveats in mind. First, we assessed life story interviews at a single measurement occasion and were, thus, not able to test the

stability or change of narratives. Given that people continue to develop their personality over time (Roberts & DelVecchio, 2000; Roberts, Walton, & Viechtbauer, 2006), a more fine-grained perspective on personality would be promising. More specifically, assessing features of the actor, agent, and author at multiple measurement occasions over time would allow for testing intraindividual correlated change, that is, the extent to which changes in one variable, such as traits, correspond to changes in another variable, such as goals or narratives (Allemand & Martin, 2016). In that matter, it might also be a valuable forecast for future studies to test how the simple passage of time (e.g., age-related developmental tasks), the occurrence of specific life events (e.g., a birth of a child, a divorce), or participation in interventions (such as in psychotherapy) might not only shape traits, goals, and narratives (Adler, 2012; Adler et al., 2016; Roberts et al., 2017) but also their interrelations over time. This long-term perspective would also provide promising avenues for exploring how coherence might be established on a trait–goal–narrative level in addition to on the narrative level (Adler, Waters, Poh, Seitz, 2018; Waters, Köber, Lee Raby, Habermas, & Fivush, 2018). We, thus, maintain that future research that applies a long-term perspective on the actor–agent–author framework is warranted to fully account for long-term interrelations between all personality levels. Within this purview, future studies might also consider expanding their research in different (sub-)cultures and/or countries to examine the generalizability of their findings.

Second, we highlight the difficulty of obtaining interrelations between levels, particularly because the constructs at different levels (a) were measured in different ways (e.g., self-report of traits and goals vs. narrative coding of themes) and (b) referred to different periods (e.g., goals are about the future, traits are about the present, and narratives are about the past, present, and future, taking a whole lifetime into account; McAdams & Pals, 2006). Given these challenges, that the present study revealed meaningful associations between personality levels *at all* speaks to the concept of multi-layered associations.

Third, because we studied interrelations, we know little about the conflict or lack of conflict that people might experience between their personality levels (e.g., Baumert et al., 2017). For instance, we know little about whether people are aware of (un)related personality features and whether this leads individuals to experience more or less discrepancies in their psychological self (Waterman, 2015). Thus, future researchers would benefit from asking their participants questions that elicits information about potential contradictions and inner conflicts. One approach might be to use rating–scale instruments or open–ended questions to assess how much conflict participants experience between how they act, what they strive for, and how they narrate their life story (for a similar method, see Benet-Martínez & Hartatos, 2005).

Fourth, as illustrated, Cronbach's alpha for personal-growth goals suggested poor internal consistency, which prompted us to exclude this goal domain from the analyses. Future studies could use more reliable personal-growth goal measures to test associations between traits, personal-growth goals, and narratives.

Fifth, future research is needed to investigate the implications of multi-layered personality motives for psychological functioning through, for instance, applying person-centered approaches (e.g., Lanza, Flaherty, & Collins, 2003). In contrast to variable-centered approaches, which focus on the differences *between* individuals within a single dimension, person-centered approaches focus on

the configuration of different variables *within* the person (Herzberg & Roth, 2006). It can be expected that individuals with a coherent arrangement across personality levels experience less tension (Syed & McLean, 2016) and, thus, report higher levels of psychological well-being. Conversely, it could also be that people with a joint pattern of getting along and getting ahead would indicate higher well-being, as these people are flexible and adaptive in a wider range of situations (for similar findings in sex-role research, see Bem, 1975). Given that these approaches need a considerable sample size (Tein, Coxe, & Cham, 2013), the present study was not well-powered enough to apply a person-centered approach. Yet, findings from the present study might provide a promising springboard for future studies testing the integrative actor–agent–author perspective by making use of a within-person approach.

Conclusion

As Novalis eloquently described it, every human being is a small family. Drawn from the present findings, it is understandable why Novalis used the word “family” instead of “neighborhood” or “village”: Members of a family are—despite their differences—similar to one another. Likewise, we revealed thematic ties within the psychological self in that dispositional traits connected to life goals, which related to themes prevalent in the narrative. Getting along, getting ahead, and a compound of both served as a helpful lens to interpret these associations. Future researchers are encouraged to test the long-term development and processes underpinning how individuals maintain and interrelate their social actor, motivated agent, and autobiographical author over time.

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Tables

Table 1
Standardized Loadings Extracted From Exploratory Factor Analyses Across Life Goals at Time 1 and Time 2

Life goals	Factor loadings					
	Time 1			Time 2		
	1	2	3	1	2	3
Fame	.78			.62		
Wealth	.59		.38	.70		
Image	.57			.55		.37
Work	.48		.33	.55		.41
Community		.83			.80	
Generativity		.70			.84	
Relationships			.57			.62
Family			.57			.59
Health			.50			.58

Note. $N = 141$. Loadings greater than .30 are presented and primary loadings (loadings greater than .45) are shown in bold. Factors are extracted through maximum likelihood method with varimax rotation.

Table 2

Descriptive Statistics and Stability Indices for Measures of Big Five Personality Traits and Life-Goal Factors at Time 1 and Time 2

Variable	Descriptive statistics								Stability	
	Time 1				Time 2				Mean-level difference	Rank-order stability
	Min	Max	<i>M</i>	<i>SD</i>	Min	Max	<i>M</i>	<i>SD</i>	Cohen's <i>d</i>	<i>r</i>
Personality traits										
Agreeableness	2.10	5.00	3.87	0.49	1.90	5.00	3.91	0.50	.15	.79
Extraversion	1.25	5.00	3.56	0.76	1.75	5.00	3.55	0.74	.01	.86
Conscientiousness	1.56	5.00	3.77	0.64	1.78	5.00	3.79	0.63	.05	.83
Openness	1.70	4.80	3.71	0.57	2.20	4.80	3.66	0.54	.13	.81
Neuroticism	1.25	4.75	2.71	0.80	1.00	4.50	2.65	0.80	.11	.74
Life-goal factors										
Agentic goals	1.44	3.38	2.37	0.40	1.44	3.44	2.30	0.40	.24	.77
Communal goals 1	1.62	4.00	3.11	0.46	1.62	4.00	3.02	0.49	.26	.72
Communal goals 2	2.67	4.00	3.71	0.27	2.58	4.00	3.67	0.29	.17	.61

Note. Communal goals 1 refers to communal social-engagement goals; communal goals 2 refers to communal relationship and health goals. Values presented in bold are significant ($p < .01$).

Table 3

Multiple Regression Analyses Predicting the Personality Traits Agreeableness, Extraversion, and Conscientiousness From Life-Goal Factors and Narrative Themes

Variable	Agreeableness				Extraversion				Conscientiousness			
	β	SE	<i>b</i> [95% CI]	<i>p</i>	β	SE	<i>b</i> [95% CI]	<i>p</i>	β	SE	<i>b</i> [95% CI]	<i>p</i>
Personality traits at Time 1												
Life-goal factors												
Agentic goals	-.28	.11	-.34 [-0.54, -0.13]	.002	.12	.17	.24 [-0.11, 0.58]	.18	.01	.14	.02 [-0.27, 0.29]	.91
Communal goals 1	.26	.09	.28 [0.10, 0.45]	.002	.06	.14	.10 [-0.18, 0.37]	.50	.01	.12	.02 [-0.21, 0.25]	.86
Communal goals 2	.04	.16	.07 [-0.24, 0.38]	.66	.09	.26	.24 [-0.27, 0.75]	.36	.21	.21	.49 [0.07, 0.91]	.02
Personality traits at Time 2												
Life-goal factors												
Agentic goals	-.19	.11	-.24 [-0.46, -0.03]	.03	.10	.17	.19 [-0.14, 0.52]	.26	-.04	.14	-.06 [-0.33, 0.22]	.69
Communal goals 1	.24	.09	.27 [0.09, 0.44]	.003	-.001	.14	-.001 [-0.27, 0.27]	.99	.04	.12	-.05 [-0.29, 0.18]	.64
Communal goals 2	.13	.16	.23 [-0.10, 0.55]	.16	.14	.25	.39 [-0.11, 0.88]	.13	.25	.21	.57 [0.15, 0.99]	.01
Narrative themes												
Agency	.02	.04	.01[-0.07, 0.09]	.80	-.06	.06	-.04 [-0.15, 0.08]	.50	.13	.05	.07 [-0.03, 0.17]	.16
Communion	.20	.03	.08 [0.01, 0.15]	.02	.11	.05	.07 [-0.04, 0.17]	.20	.02	.04	.01 [-0.07, 0.10]	.77

Note. CI = Confidence interval. SE = Standard error. Communal goals 1 refers to communal social-engagement goals; communal goals 2 refers to communal relationship and health goals. Life-goal factors stem from Time 1; narrative themes stem from the life story interview conducted between Time 1 and Time 2. Results are controlled for age and gender. Coefficients in bold are significant ($p < .05$). In each model, predictors of goals were entered separately from predictors of narrative themes.

Table 4

Multiple Regression Analyses Predicting the Personality Traits Openness to Experience and Neuroticism From Life-Goal Factors and Narrative Themes

Variable	Openness to experience				Neuroticism			
	β	SE	<i>b</i> [95% CI]	<i>p</i>	β	SE	<i>b</i> [95% CI]	<i>p</i>
Personality traits at Time 1								
Life-goal factors								
Agentic goals	-.05	.13	-.07 [-0.32, 0.18]	.56	.15	.18	.28 [-0.06, 0.64]	.10
Communal goals 1	.35	.10	.43 [0.23, 0.64]	<.001	.07	.15	.13 [-0.16, 0.42]	.38
Communal goals 2	-.08	.19	-.17 [-0.54, 0.21]	.38	-.14	.26	-.39 [-0.91, 0.13]	.14
Personality traits at Time 2								
Life-goal factors								
Agentic goals	-.04	.12	-.06 [-0.29, 0.19]	.65	.12	.18	.24 [-.012, 0.59]	.19
Communal goals 1	.32	.10	.37 [0.17, 0.57]	<.001	.09	.15	.15 [-0.14, 0.45]	.20
Communal goals 2	-.04	.18	-.08 [-0.45, 0.28]	.65	-.07	.27	-.20 [-0.73, 0.34]	.46
Narrative themes								
Agency	.19	.04	.09 [0.01, 0.18]	.04	-.01	.06	-.003 [-0.13, 0.12]	.95
Communion	-.01	.04	-.003 [-0.08, 0.07]	<.001	-.01	.06	-.004 [-0.11, 0.10]	.95

Note. CI = Confidence interval. SE = Standard error. Life-goal factors stem from Time 1; narrative themes stem from the life story interview conducted between Time 1 and Time 2. Results are controlled for age and gender. Coefficients in bold are significant ($p < .05$). In each model, predictors of life-goal factors were entered separately from predictors of narrative themes.

Table 5
Multiple Regression Analyses Predicting Life-Goal Factors From Personality Traits and Narrative Themes

Variable	Agentic goals				Communal social-engagement goals				Communal relationship and health goals			
	β	SE	<i>b</i> [95% CI]	<i>p</i>	β	SE	<i>b</i> [95% CI]	<i>p</i>	β	SE	<i>b</i> [95% CI]	<i>p</i>
Life-goal factors at Time 1												
Personality traits												
Agreeableness	-.18	.08	-.15 [-0.30, -0.001]	.04	.24	.09	.23 [0.05, 0.40]	.01	.14	.05	.02 [-0.02, 0.19]	.75
Extraversion	.18	.05	.08 [0.003, 0.19]	.04	.11	.05	.08 [-0.04, 0.17]	.22	.13	.03	.04 [-0.16, 0.18]	.23
Conscientiousness	.08	.05	.11 [0.01, 0.22]	.32	.06	.06	.04 [-0.08, 0.16]	.51	.27	.04	.09 [0.05, 0.20]	.02
Openness	-.02	.06	.003 [-0.11, 0.21]	.86	.23	.07	.19 [0.05, 0.33]	.01	-.02	.04	-.03 [-0.09, 0.07]	.54
Neuroticism	.14	.05	.04 [-0.05, 0.13]	.17	.22	.06	.13 [0.01, 0.23]	.03	.12	.03	.01 [-0.02, 0.19]	.74
Life-goal factors at Time 2												
Personality traits												
Agreeableness	-.21	.07	-.17 [-0.31, -0.003]	.02	.12	.09	.11 [-0.07, 0.20]	.22	.14	.05	.09 [-0.02, 0.19]	.12
Extraversion	.15	.05	.08 [-0.01, 0.17]	.09	-.02	.06	-.01 [-0.13, 0.11]	.86	.13	.04	-.05 [-0.16, 0.18]	.14
Conscientiousness	.18	.05	.11 [0.01, 0.22]	.03	.14	.07	.11 [-0.03, 0.24]	.11	.27	.04	.12 [0.05, 0.20]	.00
Openness	.01	.06	.003 [-0.11, 0.21]	.96	.20	.08	.17 [-0.03, 0.24]	.03	-.02	.04	-.01 [-0.09, 0.07]	.80
Neuroticism	.08	.05	.04 [-0.05, .13]	.40	.12	.07	.11 [-0.07, 0.20]	.25	.12	.04	.09 [-0.02, 0.19]	.22
Narrative themes												
Agency	.14	.03	.05 [-.08, 0.11]	.09	-.09	.04	-.04 [-0.11, 0.04]	.34	.01	.02	.001 [-0.04, 0.04]	.95
Communion	-.24	.03	-.07 [-.13, -0.03]	.04	.08	.03	.03 [-0.04, 0.09]	.39	.07	.02	.02 [-0.02, 0.06]	.41

Note. CI = Confidence interval. SE = Standard error. Personality traits stem from Time 1; narrative themes stem from the life story interview conducted between Time 1 and Time 2. Results are controlled for age and gender. Coefficients in bold are significant ($p < .05$). In each model, predictors of traits were entered separately from predictors of narrative themes.

Table 6
Multiple Regression Analyses Predicting Narrative Themes From Personality Traits and Life-Goal Factors

Variable	Agency				Communion			
	β	SE	<i>b</i> [95% CI]	<i>p</i> value	β	SE	<i>b</i> [95% CI]	<i>p</i> value
Personality traits								
Agreeableness	-.08	.12	-.18 [-0.64, 0.28]	.43	.24	.26	.64 [0.12, 1.15]	.02
Extraversion	.03	.14	.05 [-0.24, 0.34]	.73	.16	.16	.28 [-0.04, 0.59]	.09
Conscientiousness	.18	.16	.32 [-0.01, 0.64]	.06	.07	.18	.14 [-0.22, 0.50]	.44
Openness	.15	.18	.29 [-0.07, 0.66]	.11	-.01	.12	-.02 [-0.43, 0.39]	.93
Neuroticism	.08	.15	.12 [-0.18, 0.41]	.44	.17	.17	.27 [-0.06, 0.60]	.11
Life-goal factors								
Agentic goals	.11	.26	.32 [-0.21, 0.84]	.24	-.14	.30	-.44 [-1.04, 0.14]	.14
Communal goals 1	-.08	.33	-.20 [-0.06, 0.23]	.36	.05	.25	.13 [-0.04, 0.62]	.60
Communal goals 2	.11	.39	.47 [-0.32, 1.26]	.25	.05	.45	.22 [-0.67, 1.11]	.63

Note. CI = Confidence interval. SE = Standard error. Communal goals 1 refers to communal social-engagement goals; communal goals 2 refers to communal relationship and health goals. Agency and communion themes stem from the life story interview conducted between Time 1 and Time 2; personality traits and life-goal factors are from Time 1. Significant results ($p < .05$) are presented in bold. Results are controlled for age and gender. In each model, predictors of traits were entered separately from predictors of goals.

Supplemental Material

Table S1
Schema for Coding Subcategories of Agency

Subcategory	Description
Self-mastery	Self-mastery applies to scenes in which the narrating person strives to successfully expand, perfect, or master the self. A characteristic of a self-mastery scene is the ability to strengthen the self or one's insights into one's identity or meaning in life. These insights often entail the realization of new plans, reflect a mission in life, or include an increased sense of control over a significant life event (e.g., bereavement, reaching a milestone, etc.).
Status/victory	The narrating person reports heightened status or prestige, which was obtained in a social context, such as receiving an honor or winning a competition. Status/victory does not imply goal achievement per se but rather underscores the interpersonal and implicitly competitive nature of success.
Achievement/responsibility	The narrator reports success in achieving a task, a job, or an instrumental goal. Feelings of pride, confidence, or success are accompanied after having overcome significant challenges. In contrast to the winning aspect of status/victory, this category highlights that a person has met implicit or explicit achievement standards and is responsible for achieving them.
Empowerment	The narrating person feels enlarged or empowered through a connection to something larger and more powerful than the self. The driving forces are either (a) God, nature, the cosmos, or something larger in the universe, or (b) a highly influential teacher, mentor, or authority providing guidance or assistance.

Note. The coding of the subcategories is based on McAdams (2010a).

Table S2
Schema for Coding Subcategories of Communion

Subcategory	Description
Love/friendship	The narrating person experiences an enhanced feeling of love or friendship toward another person, for instance toward peers, friends, or a romantic partner. This category specifically focuses on the development of social and romantic relationships while excluding feelings of caring and nurturance, such as in the parent-child bond, and does not describe enjoying oneself in the presence of another.
Dialogue	The narrator describes a reciprocal, non-instrumental, and positive form of conversation with someone or with a group. The dialogue is perceived positively for its own sake and does not serve as a means to another end.
Caring/help	The narrating person offers care, assistance, nurturance, support, or therapy to another person, providing physical, material, social, or emotional welfare or enhanced well-being to this person. This category does not apply when the narrator receives care or support.
Unity/togetherness	The narrating person feels part of a larger community. In contrast to the previous categories, this category does not focus on a particular relationship: The individual instead reports a sense of oneness, harmony, belongingness, or solidarity with a group of people, with a community, or even with all of humankind. Such scenes often include narratives of being surrounded by friends or family at an important positively connoted event.

Note. The coding of the subcategories is based on McAdams (2010a).

Table S3
Descriptive Statistics and Stability Indices for Measures of Life Goals at Time 1 and Time 2

Variable	Descriptive statistics								Stability	
	Time 1				Time 2				Mean-level difference	Rank-order stability
	Min	Max	<i>M</i>	<i>SD</i>	Min	Max	<i>M</i>	<i>SD</i>	Cohen's <i>d</i>	<i>r</i>
Life goals										
Fame	1.00	3.50	1.60	0.51	1.00	3.00	1.55	0.50	.12	.71
Wealth	1.00	4.00	2.26	0.56	1.00	3.75	2.15	0.56	.25	.70
Image	1.00	3.75	2.26	0.68	1.00	3.75	2.22	0.64	.09	.77
Work	1.75	4.00	3.38	0.44	1.75	4.00	3.31	0.46	.15	.60
Community	1.25	4.00	3.12	0.55	1.50	4.00	3.05	0.54	.17	.69
Generativity	1.50	4.00	3.11	0.47	1.75	4.00	2.99	0.52	.28	.65
Relationships	2.00	4.00	3.76	0.35	2.50	4.00	3.68	0.38	.24	.61
Family	1.75	4.00	3.77	0.35	1.50	4.00	3.73	0.41	.13	.58
Health	2.25	4.00	3.59	0.41	2.25	4.00	3.59	0.37	.01	.68
Personal growth	2.50	4.00	3.51	0.37	2.50	4.00	3.48	0.38	.09	.59

Note. Values presented in bold are significant ($p < .01$).

Table S4
Pearson Correlations Between Big Five Personality Traits, Life-Goal Factors, Narrative Themes, and Age

Variable	1	2	3	4	5	6	7	8	9	10	11
1 Agreeableness	–	-.02	.15	.21	-.30	-.26	.22	.16	.08	.24	.20
2 Extraversion	.06	–	.16	.04	-.17	.17	.05	.23	-.02	.11	.01
3 Conscientiousness	.13	.26	–	.09	-.29	.04	.10	.27	.12	.10	.16
4 Openness	.33	.20	.14	–	.07	.02	.21	.02	.19	.07	.01
5 Neuroticism	-.34	-.30	-.30	-.05	–	.12	.10	.11	.01	-.01	-.17
6 Agentic goals	-.28	.12	-.02	-.07	.17	–	.16	.33	.09	-.22	-.36
7 Communal goals 1	.26	.12	.09	.33	.07	.08	–	.21	-.07	.08	.10
8 Communal goals 2	-.01	.15	.14	-.01	.02	.37	.24	–	.05	.09	-.12
9 Agency	-.06	.06	.13	.13	.06	.16	-.05	.14	–	.37	-.11
10 Communion	.21	.15	.11	.11	.00	-.14	.06	.01	.37	–	.11
11 Age	.21	.08	.29	.10	-.21	-.32	.07	-.21	-.11	.11	–

Note. $N = 141$. Pearson correlations below the diagonal represent correlations using trait and goal measures from Time 1; Pearson correlations above the diagonal represent correlations using trait and goal measures from Time 2. Agency and communion themes are from the life story interview conducted between Time 1 and Time 2. Correlation coefficients in bold are significant ($p < .05$).

Table S5

Multiple Regression Analyses Predicting the Personality Traits Agreeableness, Extraversion, and Conscientiousness From Life-Goal Factors and Narrative Themes Controlling For Previous Agreeableness, Extraversion, and Conscientiousness

Variable	Agreeableness				Extraversion				Conscientiousness			
	β	SE	<i>b</i> [95% CI]	<i>p</i>	β	SE	<i>b</i> [95% CI]	<i>p</i>	β	SE	<i>b</i> [95% CI]	<i>p</i>
Life-goal factors												
Agentic goals	.02	.07	.02 [-0.13, 0.16]	.80	-.003	.09	-.01 [-0.18, 0.17]	.95	-.04	.05	-.07 [-0.04, 0.05]	.41
Communal goals 1	.04	.06	.05 [-0.07, 0.17]	.40	-.05	.07	-.08 [-0.22, 0.06]	.28	-.05	.04	-.07 [-0.05, 0.04]	.40
Communal goals 2	.10	.11	.17 [-0.04, 0.39]	.11	.07	.13	.19 [-0.08, 0.46]	.16	.07	.04	.17 [0.08, 0.65]	.18
Narrative themes												
Agency	.12	.03	.05 [0.01, 0.11]	.03	-.09	.03	-.06 [-0.12, 0.01]	.07	-.004	.03	-.002 [-0.06, 0.05]	.94
Communion	.02	.02	.01 [-0.04, 0.05]	.72	.02	.03	.07 [-0.04, 0.07]	.61	.01	.03	.01 [-0.04, 0.06]	.80

Note. CI = Confidence interval. SE = Standard error. Communal goals 1 refers to communal social-engagement goals; communal goals 2 refers to communal relationship and health goals. Life-goal factors stem from Time 1 and narrative themes stem from the life story interview conducted between Time 1 and Time 2. Results are controlled for age and gender. Coefficients in bold are significant ($p < .05$). In each model, predictors of goals were entered separately from predictors of narrative themes.

Table S6

Multiple Regression Analyses Predicting the Personality Traits Openness to Experience and Neuroticism From Life-Goal Factors and Narrative Themes Controlling For Previous Openness to Experience and Neuroticism

Variable	Openness to experience				Neuroticism			
	β	SE	<i>b</i> [95% CI]	<i>p</i>	β	SE	<i>b</i> [95% CI]	<i>p</i>
Life-goal factors								
Agentic goals	.001	.07	.001 [-0.15, 0.15]	.99	.02	.12	.03 [-0.23, 0.28]	.83
Communal goals 1	.03	.07	.04 [-0.09, 0.17]	.55	.03	.11	.06 [-0.15, 0.26]	.57
Communal goals 2	.02	.11	.004 [-0.18, 0.26]	.69	.03	.19	.09 [-0.29, 0.47]	.65
Narrative themes								
Agency	.09	.03	.04 [-0.01, 0.09]	.09	-.03	.04	-.02 [-0.11, 0.06]	.58
Communion	-.05	.02	-.02 [-0.07, 0.03]	.39	.01	.04	.003 [-0.07, 0.08]	.93

Note. CI = Confidence interval. SE = Standard error. Life-goal factors stem from Time 1 and narrative themes stem from the life story interview conducted between Time 1 and Time 2. Results are controlled for age and gender. Coefficients in bold are significant ($p < .05$). In each model, predictors of goals were entered separately from predictors of narrative themes.

Table S7

Multiple Regression Analyses Predicting Later Life-Goal Factors From Personality Traits and Narrative Themes Controlling for Previous Life-Goal Factors

Variable	Agentic goals				Communal social-engagement goals				Communal relationship and health goals			
	β	SE	<i>b</i> [95% CI]	<i>p</i>	β	SE	<i>b</i> [95% CI]	<i>p</i>	β	SE	<i>b</i> [95% CI]	<i>p</i>
Personality traits												
Agreeableness	-.08	.05	-.07 [-0.17, 0.03]	.21	-.05	.07	-.05 [-0.19, 0.09]	.45	.13	.05	.08 [-0.01, 0.16]	.09
Extraversion	.02	.03	.01 [-0.05, 0.07]	.72	-.09	.04	-.06 [-0.15, 0.03]	.17	.07	.04	.03 [-0.04, 0.08]	.33
Conscientiousness	.12	.04	.08 [0.004, 0.15]	.04	.10	.05	.08 [-0.02, 0.17]	.12	.17	.04	.08 [0.01, 0.14]	.02
Openness	.01	.04	.01 [-0.07, 0.09]	.80	.03	.06	.03 [-0.08, 0.14]	.64	.01	.04	.004 [-0.07, 0.08]	.01
Neuroticism	-.02	.03	-.001 [-0.07, 0.06]	.82	-.04	.05	.02 [-0.11, 0.07]	.64	.10	.04	.04 [-0.02, 0.09]	.21
Narrative themes												
Agency	.001	.02	.001 [-0.04, 0.04]	.98	-.04	.03	-.02 [-0.07, 0.04]	.54	-.07	.02	-.02 [-0.05, 0.02]	.32
Communion	-.11	.02	-.03 [-0.07, 0.003]	.07	.03	.02	.02 [-0.04, 0.06]	.65	.10	.02	.02 [-0.01, 0.05]	.18

Note. CI = Confidence interval. SE = Standard error. Personality traits stem from Time 1; narrative themes stem from the life story interview conducted between Time 1 and Time 2. Results are controlled for age and gender. Coefficients in bold are significant ($p < .05$). In each model, predictors of traits were entered separately from predictors of narrative themes.

APPENDIX B: Study 2

The Narrative Identity Approach and Romantic Relationships

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Abstract

Narrative identity is an internal and evolving life story in which the narrator integrates conceptions of the personal past, present, and presumed future within a coherent story-based framework. Carrying a number of personal and social implications, this construct represents a psychological resource. We contend that, like life itself, one's history within the romantic domain as well as one's current romantic relationship(s) are often viewed using story-based frameworks. As such, we argue that the greater adoption of the narrative identity approach within the close relationships literature would complement and extend current assessment paradigms used to study romantic relationships. In this article, we outline the conceptual and methodological background of the narrative identity approach. This is followed by a brief review of extant research using narrative methodologies in the study of romantic relationships. Finally, a series of current and future research directions are presented that rest at the nexus between the narrative identity approach and the study of romantic relationships. We conclude that the more extensive integration of the narrative identity approach within the close relationships literature would contribute to the understanding of such relationships. This is a story worth telling.

Keywords. Narrative identity, relationship research, relationship satisfaction

Introduction

In late adolescence and early adulthood, individuals begin to develop life stories, or narrative identities (Habermas & Bluck, 2000; McAdams, 1995), which are phenomenological representations of personal pasts, presents, and anticipated futures, as represented within story-based frameworks (McAdams, 2013). As a psychological resource, narrative identity provides an individual with a sense of identity, meaning, purpose, direction, and coherence over time (e.g., Singer, 2004). Consistent with the notion that narrative identity is itself a resource, features of this construct, for example its affective quality, have been associated with a wide array of important outcomes, including health and well-being (e.g., Adler, Lodi-Smith, Philippe, & Houle, 2016; Dunlop & Tracy, 2013).

We contend that narrative processing is often used to make sense of personal and social phenomenon from whole lives, to particular relationships, to specific life events (Bruner, 1986; Sarbin, 1986). As such, the narrative identity approach (NIA), with its established measurement and analytical procedures, holds much to offer to a wide range of research areas, such as to the study of romantic relationships. Although this research field is no stranger to narrative methods *per se*, we see certain untapped potential. In the interest of stimulating a more extensive incorporation of the NIA within the close relationships literature, we present a conceptual and methodological overview of the NIA. This is followed by a brief review of the literature in which interview techniques and narrative methodologies have been used to study romantic relationships, as well as the small but growing area of research that has specifically adopted the NIA in the study of romantic relationships. Finally, we flag a modest number of viable current and future research directions resting at the nexus between the NIA and the study of close relationships.

Storying the Romance

Narrative processing is a common way by which individuals make sense of, and derive meaning from, their worlds, so much so that narrative has been recognized as one of the two principle modes of thought (Bruner, 1986). This “narrative mode” (Bruner, 1986, p. 11) allows individuals to draw inferences about the various relevant personal intentions, motives, and concerns that abound within the social world (in comparison to the “paradigmatic mode”, which concerns itself with objectively verifiable components of the physical world; Bruner, 1986, p. 11). On the basis of this definition, we see the narrative mode of thought particularly relevant to individuals’ evolving understanding of a number of social phenomena, including romantic experiences, for three reasons.

First, narratives themselves concern “the specific, the personal, and the contextual” (Adler et al., 2016, p. 143). Given that romantic relationships are among some of the most *specific and personal contexts* individuals experience over the course of their lifetime, it is essential to understand such relationships through a narrative lens.

Second, romantic relationships share many *characteristics* definitional of narrative. For example, romantic relationships are often framed as consisting of phases—or to use the parlance of a narrative—chapters, such as initiation, maintenance, and dissolution (Levinger, 1980). As such, romantic relationships often contain a thematic arc, a journey representing certain ebbs and flows, protagonists striving for goals (Adler et al., 2016), and stories of conflict, resolution, and denouements.

Third, we contend that autobiographical narratives about the romantic domain have similar *functions* to the more often considered life stories. In the face of life challenges (such as through

changing role affordances or social expectations; Habermas & Bluck, 2000), narrative processing and the resulting construction of a coherent life story aids in psychological functioning and flourishing (e.g., Chandler, Lalonde, Sokol, & Hallett, 2003; Dunlop, 2017; McAdams, et al., 2001). Likewise, if individuals face challenges in their romantic lives (e.g., infidelity, unrequited love), as well as certain beneficial experiences (e.g., finding a supportive partner) they may engage in narrative processing to update their storied understanding of their experiences (Dunlop, 2017; Dunlop, Hanley, & McCoy, 2017a; Dunlop, Harake, Gray, Hanley, & McCoy, 2018).

To summarize, narrative processing represents the mechanism by which individuals make sense of a wide range of social phenomena, including and in particular, their romantic histories and current romantic relationships (Dunlop et al., 2017a; Dunlop et al., 2018). As such, adopting the NIA to the study of romantic relationships likely offers insights into how individuals make sense of the various romantic experiences they encounter throughout their love life, as well as insights into what it means to feel close to another individual and to build a relationship identity.

The Narrative Identity Approach

The NIA consists of both (a) a *theory* positing that narrative identities provide individuals with a sense of meaning, purpose, and direction, and (b) a *methodology* for collecting, coding, and analyzing data relevant to narrative identity. Below, we expand on both of these aspects.

Theory

In late adolescence, individuals (at least within Modern Western societies) face increasing pressure to make sense of the lives they have lived, and plot a course forward, as they transition into young adulthood (Habermas & Bluck, 2000; McAdams, 1995). Those familiar with Eriksonian theory will recognize the parallel between the above statement and Erikson's (1968) view that, at or around this same developmental period, individuals progress to the psychosocial stage of identity vs. role confusion.

Approaching the topic of identity by asking what this construct looks like, McAdams (1985, 1995) proposed that identity takes the form of a coherent story in which connections are drawn between one's own past, present, and future, using the resources and conventions of the applicable social and cultural contexts of which the narrator is apart. Thus, for McAdams, identity "may itself be viewed as an internal and evolving life story, a way of telling the self, to the self and others, through a story or set of stories complete with settings, scenes, characters, plots, and themes" (McAdams, Diamond, St. Aubin, & Mansfield, 1997, p. 678). These stories are psychosocial constructions, meaning that they are subjective interpretations, or personal myths, in which the objective events one has experienced represent source material (Adler et al., 2016; McAdams et al., 1997). Far from being solely reflective in nature, once formed, these stories are understood to influence one's "character and personality style" (Sarbin, 2004, p. 7), meaning that the stories people construct carry implications for the decision they will later make and the lives they will come to lead (Dunlop & Tracy, 2013).

Narrative identity has most often been considered within social, personality, and developmental psychology (e.g., Adler et al., 2017; McAdams, 1995; McAdams & McLean, 2013) as well as within the field of autobiographical memory (Bernsten & Rubin, 2004; Bluck, 2003; Bluck, Alea, Habermas, & Rubin, 2005; Conway, & Pleydell-Pearce, 2000). Here as well, McAdams (1995, 2013) deserves much of the credit, as he argued that narrative identity constitutes a distinct level of

personality. According to his integrative framework for studying persons (McAdams, 1995, 2015a, 2015b; McAdams & Olson, 2010; McAdams & Pals, 2006), personality manifests and develops along three separate (but related) conceptual levels. First, *dispositional traits* capture a person's broad patterns of affect, cognition, and behavior (e.g., John, Naumann, & Soto, 2008; John & Srivastava, 1999). Second, *characteristic adaptations* reflect motivational, social-cognitive, and developmental concerns, including a range of motives and strivings (e.g., Little, 1999) that are contextualized in time, place, and with respect to a specific social role. Finally, at the third level rest *self-defining life narratives* arguably, "the most distinctive and unique aspect of the person" (Dunlop, 2015, p. 312).

There are many reasons why narrative identity has received substantial research attention. Here, we highlight two. First, it is said that a consideration of narrative identity is required to truly know a person—to fully capture this individual's personality—and to understand his or her inner world as well as his or her social functioning (McAdams, 1995). Trait taxonomies adequately capture individuals' recurrent patterns of affect, cognition, and behavior. Alone, however, exclusive reliance on these constructs would skew the field to a "psychology of the stranger" (McAdams, 1995, p. 365), less suited to capture the rich inner world of individuals. The same is true of the constructs housed at the level of characteristic adaptations. It is not the case, however, that, when compared to trait and characteristic adaptation approaches, narrative approaches do a better job of capturing and/or representing personality in any objective sense of the word. Rather, as we outline below, narrative and non-narrative approaches are attuned to different components of persons as well as the experiences they amass, jointly providing a more comprehensive understanding of the phenomenon in question¹. Second, a number of (mostly prospective) studies have demonstrated that narratives are relevant for the health, well-being, and behaviors of narrators. The constructs derived from participants' narrative identities often reveal predictive (and incremental) validity for a variety of life outcomes; predictive validity above and beyond the relevance of other personality attributes and demographic factors (e.g., Adler et al., 2016; Cox & McAdams, 2014; Dunlop & Tracy, 2013; King, Scollon, Ramsey, & Williams, 2000; King & Raspin, 2004; Lilgendahl & McAdams, 2011; Philippe, Koestner, Beaulieu-Pelletier, & Lecours, 2011; Walker & Frimer, 2007). Recognition of this fact, of course, begs the question of how narrative identity is typically, or traditionally, assessed.

Methodology

When measuring narrative identity, researchers commonly prompt participants for narrative descriptions of key autobiographical scenes or self-defining memories. Both reflect a person's coherent sense of self over time, as represented by a salient memory from one's life (e.g., Adler et al., 2017; Conway, Singer, & Tagini, 2004; Singer, 2004; Singer & Blagov, 2004; Singer & Salovey, 1993). However, whereas key autobiographical scenes are specific, emotionally salient moments in life (e.g., high points, low points, and turning points), self-defining memories, are less constrained insofar as they represent emotionally salient experiences, regardless of their valence or designation as turning points. Prompts to assess key autobiographical scenes may be administered in person via the Life

¹ Of course, discourse exists as to whether narrative identity truly represents an integral level of personality (e.g., DeYoung, 2015). Drawing from the personological tradition, however, we contend that the very concept of what it means to be a person "presupposes the continuity of experience, which entails beginnings, middles, and ends" (Barresi & Juckes, 1997, p. 693)—that is, narrative.

Story Interview (LSI; McAdams, 2008) or via a computer-mediated or paper-and-pencil assessment procedure (for example, see McCoy & Dunlop, 2016). The former relies on oral responses, whereas the latter solicits typed or written responses. Given that the prompts contained in the LSI serve as “the gold standard” (Adler et al., 2017, p. 147) for collecting narrative descriptions, these prompts are often repurposed when assessing aspects of narrative identity via non-interview methodologies (e.g., online questionnaires). The LSI takes between one to three hours to complete and the resulting data are typically transcribed verbatim. For purposes of illustration, we present the LSI prompt used to assess participants’ turning point narratives.

In looking back over your life, it may be possible to identify certain key moments that stand out as turning points—episodes that marked an important change in you or your life story. Please identify a particular episode in your life story that you now see as a turning point in your life. If you cannot identify a key turning point that stands out clearly, please describe some event in your life wherein you went through an important change of some kind. Again, for this event please describe what happened, where and when, who was involved, and what you were thinking and feeling. Also, please say a word or two about what you think this event says about you as a person or about your life.

Coding and analyzing narrative identity data. When coding autobiographical narratives (be they key autobiographical scenes or self-defining memories), groups of trained coders, blind to all participant information (at a minimum) and study hypotheses (ideally) are sought. These coders are then tasked with rating the data in accordance with either pre-existing or novel coding systems. In either case, the training is not complete until a high degree of inter-rater reliability is established (for discussion, see Adler et al., 2017; Cicchetti, 1994). On the basis of the nature of the coding system (e.g., ratings on a Likert scale, nominal presence/absence scale), the inter-rater reliability may be quantified using intra-class correlations, Cohen’s kappa, Category Agreement, or delta (for further guidance regarding coding, see also Adler et al., 2016; Adler et al. 2017). If the degree of inter-rater reliability observed does not meet a pre-defined threshold, then the training and the independent coding process must be redone until an appropriate inter-rater reliability is achieved. As such, reliable coding is *the* essential step for translating participants’ qualitative responses into quantitative information, subsequently analysed using inferential statistics (see Adler et al., 2017; Syed & Nelson, 2015).

On the basis of the nature of the dataset at the researchers’ disposal, responsibilities may be distributed throughout the coding team in a number of ways. For example, a primary coder may be tasked with rating all responses while a secondary coder may be tasked with coding a randomly identified subset of participants’ responses (in the interest of determining the reliability of the primary coder’s ratings). For the sake of consistency across participants, the primary coder’s ratings would subsequently be used in all analyses (e.g., Frimer, Walker, Dunlop, Lee, & Riches, 2011; Frimer, Walker, Riches, Lee, & Dunlop, 2012). Alternatively, more than one coder may be tasked with rating all relevant narrative materials (again allowing for determination of the reliability of this coding) and

then the responses of these coders would be averaged. These averaged responses would then be considered in all subsequent analyses (e.g., Dunlop & Hanley, 2018; Dunlop, Hanley, McCoy, & Harake, 2017b).

Coding systems. The above speaks to the “how” of coding. With respect to the “what” of coding, autobiographical narratives are typically quantified in terms of constructs that may be placed within one of four broader conceptual categories (e.g., Adler et al., 2016; Adler et al. 2017). Although these categories vary amongst themselves, they share an emphasis on the quantification of the emergent meanings, emphases, and interpretations, the narrator has drawn from his or her lived experiences.

Motivational themes, often operationalized in terms of agency and communion (Bakan, 1966; McAdams, 2010), capture what the narrator has longed for in the past or is currently seeking. *Affective themes* capture the emotional quality of the narrative in question. These themes focus either on the valence of the story (affective tone), or on shifts in this valence, typically operationalized in terms of redemption (negative beginning leading to a positive ending) or contamination (positive beginning leading to a negative ending) (McAdams et al., 2001). Themes of *integrative meaning* capture the interpretative evaluation and meaning the narrator has applied to his or her storied experience (e.g., King et al., 2000). These themes provide indication of the degree to which narrated events are psychologically resolved and/or have been integrated into a new understanding of the self and the social world, illustrating personal growth and development of that person (Bauer & McAdams, 2004; Bauer, McAdams, & Sakaeda, 2005). Finally, *structural elements* capture the configural dimension of autobiographical narratives (e.g., Adler, Wagner, & McAdams, 2007; Reese, Haden, Baker-Ward, Bauer, Fivush, & Ornstein, 2011). These elements include constructs such as complexity and coherence, details emphasized, as well as the degree to which the narrator tells the story in a sophisticated and expressive manner.

Narrative Methodologies in the Study of Romantic Relationships

As we shift from the broad discussion of the NIA to the consideration of its application to the study of close relationships, we wish to highlight that we, nor no known narrative identity researcher for that matter, view the NIA as a complete replacement for non-narrative research paradigms. Rather, narrative methodologies are best understood as complementary to existing assessment paradigms. For example, in the *Relationship Assessment Scale* (RAS; Hendrick, 1988), participants are asked to rate items such as “How well does your partner meet your needs?” or “How good is your relationship compared to most?” on a Likert scale. Without doubt, measures such as these help the researcher to assess participants’ overall relationship satisfaction. Such measures are, however, less suitable at providing insights into *why* people believe they are more (or less) satisfied with their relationships and *what* they believe contributes to this evaluation. Again, it comes back to the meaning individuals abstract from their experiences, an element of lived experience that the NIA is particularly attuned to, and capable of, assessing.

On a similar note, it needs to be highlighted that not all open-ended responses are relevant to the NIA. For instance, consider an open-ended question that might appear in a structured interview, such as “What makes you happy in a romantic relationship?” Answers to this question hold the potential to elicit insights that may meaningfully add to the information gathered via measures such as

the RAS. In their responses to this question, however, participants are likely more inclined to draw more readily from semantic memory systems (which capture more generic understandings, or scripts, of events such as first dates, and break-ups) rather than episodic memory systems (which capture more specific representations of personal experiences, such as one's first date with his or her current partner, and his or her most recent breakup; see Conway, 2005). The NIA, by way of contrast, is more concerned with the specific, phenomenological, and emotionally evocative—characteristics associated with episodic, rather than semantic, systems.

Shifting to an even greater degree of specificity, not all research conducted on autobiographical narratives falls within the purview of the NIA. Recall, that the NIA is most concerned with exploring the meaning participants derive from specific experiences via the reliability identification (and quantification) of features within the extant narrative materials. An alternative approach to the analysis of narrative materials—one that has been used in the study of romantic relationships—is to focus on *how* participants tell stories, that is, to focus on the non-verbal behaviors participants display throughout a storytelling process, as well as the specific words, they use while so doing (referred to as participants' linguistic style). To that aim, close relationship researchers have developed several interview techniques, including the Oral History Interview (OHI). In the OHI, couples co-construct their dating and relationship history and describe how this relationship has changed over time (e.g., Buehlman, Gottman, & Katz, 1992; Carrère, Buehlman, Gottman, Coan, & Ruckstuhl, 2000; Custer, Holmberg, Blair, & Orbuch, 2008; Dooan, Carrère, & Riggs, 2010). Partners' non-verbal behaviors displayed during these interviews have been found to correspond with a wide range of important outcomes, including relationship satisfaction and stability (e.g., Gottman, Coan, Carrere, & Swanson, 1998).

In addition to examining the behaviors romantic partners display, researchers have also focused on participants' linguistic style, in particular, how frequently they used certain words or word classes, such as personal pronouns. Partners' word use and, particularly, the degree to which they engage in we-talk (i.e., the degree to which they use first-person plural pronouns such as “we”, “us”, “ours”) has been shown to correspond favorably with relationship well-being and a wide array of physical and mental health outcomes (e.g., Alea, Singer, & Labunko, 2015; Rohrbaugh, Mehl, Shoham, Reilly, & Ewy, 2008; Seider, Hirschberger, Nelson, & Levenson, 2009; Simmons, Gordon, & Chambless, 2005).

Untapped Potential

As the above summary makes clear, we are certainly not the first to suggest approaching the study of romantic relationships using a narrative approach. However, we currently see blind spots in how the narrative methodologies have been used in the study of romantic relationships. These blind spots pertain to both (a) the type of narrative data targeted, and (b) the analysis of these data.

With respect to (a) the type of data targeted, close relationship researchers have tended to focus on the co-narration and co-construction of relationship experiences (e.g., Buehlman et al., 1992). As such, the field has come to know less about partners' independent representations of their current romantic relationships. For instance, little is known about the degree to which the autobiographical stories independently provided by couple members align, and whether compatibility in stories is relevant for the subsequent development of their romantic relationships. Such a focus is

timely given recent research interest in vicarious life stories about the partner (i.e., the life stories one knows of the partner) and the role of the stories' similarity (Panattoni & Thomsen, 2018) as well as work exploring the stability and consistency of relationship memories (Drivdahl & Hyman, 2014).

Furthermore, in prioritizing participants' current romantic relationships, researchers have paid little attention to (i) the manner in which individuals story their entire love lives, and (ii) the romantic narratives constructed by single individuals (Dunlop et al., 2017a, 2017b; Dunlop et al., 2018). Speaking to the former, for most, one's current romantic relationship represents but a part of his or her entire history within the romantic domain. The manner in which these previous chapters are storied may carry downstream consequences for how one is currently fairing in his or her love life. Speaking to the latter, we challenge that, currently, research exploring the narrative psychology of romantic relationships has been somewhat exclusionary of the experiences of individuals who currently find themselves single.

With respect to (b) the analysis of narrative data, close relationship researchers have tended to explore participants' non-verbal behaviors and/or word use demonstrated in response to questions about their current romantic relationships (Alea et al., 2015; Buehlman et al., 1992; Simmons et al., 2005). Of course, this is with good reason, as both non-verbal behaviors and word use have been found to predict a host of important constructs (e.g., Buehlman et al., 1992). The emergent meanings participants draw from their romantic experiences, however, have less frequently been considered. Considering meaning is particularly relevant, given that it is central to an understanding of one's sense of self, others, and social relationships (Dunlop et al., 2017a; McAdams, 1995). The NIA helps to overcome these blind spots.

The Narrative Identity Approach and Romantic Relationships

The adoption of the NIA within the close relationships literature is in its infancy. Nevertheless, in the fledgling work conducted in this area, researchers have begun to explore (1) the more thematic and meaning-based aspects of participants' relationship stories, (2) narrative representations of love lives in their entirety, and (3) couple members' independent narrative representations of their current relationships. In the interest of assessing participants' experiences within the romantic domain, such research at the nexus of the NIA and the close relationships literature has often modified prompts contained within the LSI (McAdams, 2008). Below, we present an overview of each of the aforementioned areas, beginning with the most well-established and progressing to the most recent.

Meaning Making in Relationships and Relationship Stories

To capture the meaning inherent in participants' relationship stories, narrative researchers have begun to assess and analyze *relationship-defining memories* (Alea & Vick, 2010). These memories are conceptually similar to self-defining memories (McLean & Thorne, 2003) and reflect emotionally-charged autobiographical experiences drawn from participants' current romantic relationships. The quality of these stories (i.e., whether they are perceptually vivid, emotionally positive, emotionally intense and often rehearsed) has been shown to relate positively to relationship satisfaction (Alea & Vick, 2010). In addition, researchers have examined how the intimacy-related content and affective tone of relationship stories are linked to relationship quality, relationship stability, and mental health outcomes (Frost, 2013).

Furthermore, although not explicitly aligned with the NIA, some findings from the close relationship literature are nevertheless consistent with the NIA's emphasis on the meaning inherent in participants' narratives. For example, researchers have explored prominent themes (e.g., respect, acceptance, shared meaning, and vision) present in couples' co-constructed relationship stories (e.g., Gildersleeve, Singer, Skerrett, & Wein, 2017). In a similar vein, researchers have incorporated more meaning-based themes in their analysis of participants' relationship narratives. For example, in couple's descriptions of hardships, Buehlman and colleagues (1992) examined the theme of "glorifying the struggle," manifest when "the difficult times have helped them grow stronger and closer to each other." (p. 299). This theme shares a similarity with the redemptive story from the NIA (e.g., Dunlop & Tracy, 2013; McAdams et al., 2001).

Narrative Representations of Love Lives

Acknowledging that one's current romantic relationship often reflects a part rather than the entirety of one's love life, researchers have begun to focus on the narrative construction of entire love lives. To this aim, a variant of the LSI targeting narrative representations of entire love lives—the Love Life Story Interview (LLSI; Dunlop et al., 2018; manual accessible here: <https://osf.io/2edvg/>) has been developed. Among other insights, research relying on this measure has identified the manifest events people recognize as love life high points, low points, and turning points (Dunlop et al., 2017b), explored thematic differences in the stories provided by single and coupled individuals (Dunlop et al., 2017a), and identified a negative relation between levels of avoidant attachment and the communion and positive affective tone present in participants' romantic key scenes (Dunlop et al., 2018).

Narrative Representations of Current Romantic Relationships

Additional to their entire love lives, individuals also make sense of specific romantic relationships (Bühler, Maghsoodi, & McAdams, 2018). As such, the manner in which one stories his or her current relationship may carry implications for this relationship's functional and evaluative components. One way to assess the identity that romantic partners have formed of their current romantic relationships is to independently prompt these partners for their relationship story. A holistic understanding of said relationship is obtained if both couple members are independently assessed, either through scales or, in this case, through narrative prompts (for similar arguments for the importance of dyadic data, see Kenny, Kashy, & Cook, 2006). Speaking to this aim, in a manner paralleling the LSI (McAdams, 2008) and the LLSI (Dunlop et al., 2018), researchers have developed the Relationship Narrative Interview (RNI; Bühler, Maghsoodi, & McAdams, 2017; manual accessible here: <https://osf.io/bq8yw/>). The RNI contains a series of prompts for autobiographical recounts of relationship-specific scenes, including relationship high points, low points, and turning points, as well as sexual high points, low points, and turning points (Bühler et al., 2018).

Data collected in concert with the RNI can be used to address a number of research questions. For example, a researcher may examine the relevance of whether couple members story (1) the same experience in a different way or (2) different experiences in the same way: With respect to possibility 1, both partners might report "the birth of their first child" as a turning point in their relationship story. However, while one might construe it as ultimately having strengthened their relationship, the other might construe it as having destabilized their relationship bond. With respect to possibility 2, one partner might report "the birth of their first child" as turning point of the relationship,

while the other may recognize “moving in together” as turning point. Yet, both individuals may construe these experiences as having strengthened their relationship. Examining whether possibility 1 (same experiences, but different meanings), possibility 2 (different experience, same meanings), or both relate to relationship well-being holds the potential to offer insights into relationship development.

Furthering the Nexus of Narrative Identity and Romantic Relationships

Evident from the vintage of the citations made above, researchers have only begun to incorporate the NIA in the study of romantic relationships. As a result, there exists much that can be done to more fully integrate the NIA within the close relationships literature. It is our hope that the production of this article serves to further such integration, by alerting close relationship researchers to the NIA as well as the ways in which this approach has (and could) be applied to the study of romantic relationships. We hope that this awareness will manifest in two tangible outcomes: (a) Relationship researchers may be more likely to consider the inclusion of narrative identity assessments in their subsequent research; (b) relationship researchers may be more likely to consider whether some of the narrative data currently in hand may be amenable to a reanalysis via the coding systems associated with the NIA. Much of the content in the OHI, for example, could be coded for themes of agency, communion, redemption, and contamination.

We see several other ways in which the current literature exploring romance and romantic relationships from a narrative identity perspective may be enhanced. In the interest of increasing the likelihood that such enhancement transpires it is prudent to recognize what is, perhaps, the NIA's greatest limitation. In brief, the administration of interviews to assess narrative representations of love lives and current romantic relationships recognized here (Bühler et al., 2018; Dunlop et al., 2018) is quite time- and resource-intensive. The same is true of the transcription, coding, and analysis of the resulting qualitative material. Those relationship researchers who have an interest in the adoption of the NIA but are reluctant to do so given the resources required will therefore likely be relieved to know that the information derived from even a single narrative response has been found to relate significantly with certain outcomes (e.g., Alea & Vick, 2010; Dunlop & Tracy, 2013).

To that aim, we see it promising to include short narrative prompts in national household panels (e.g., German Socioeconomic Panel [GSOEP], the British Household Panel Study [BHPS]) that elicit information from participants' narrative identities (e.g., “Between the last measurement occasion and now, please describe a scene, episode, or moment in your [love] life that stands out as an especially positive experience”).

There are at least four ways in which including narrative identity prompts in national household panels might enrich narrative psychology and related fields. First, these datasets contain large, representative samples with individuals across the life span, allowing for the exploration of certain developmental hypotheses, such as whether age matters for how people narrate their (love) lives, and how this narration might change across the life span. Second, given that most countries conduct some sort of household panel, researchers could approach the study of narratives and romance from a cultural (or cross-cultural) perspective. Third, household panels are routinely collected over periods of several years, which would allow for exploration regarding the stability of participants' stories. Fourth, given that household panels are distributed within families, participants' narrative responses could be

explored in relation to other family members, specifically those provided by respondents' romantic partners.

Conclusion

The NIA entails a variety of possibilities and offers substantial methodological flexibility. The avenues that we have illustrated here are but some of these possibilities. Researchers interested in applying the NIA to the study of romantic relationships can and should take from the NIA only those aspects they deem most useful. We are convinced that the more widespread adoption of the NIA within the close relationships literature can further the story of the nature of romantic relationships. We hope that the reader will agree that such a story is one worth telling.

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APPENDIX C: Study 3

A Closer Look at Life Goals Across Adulthood: Applying a Developmental Perspective to Content, Dynamics, and Outcomes of Goal Importance and Goal Attainability

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A Closer Look at Life Goals Across Adulthood: Applying a Developmental Perspective to Content, Dynamics, and Outcomes of Goal Importance and Goal Attainability

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Abstract: It is well established that goals energize and direct behaviour across the lifespan. To better understand how goals are embedded in people's lives across adulthood, the present research examined life goals' content (health, personal growth, prosocial engagement, social relations, status, work), dynamics (interplay between goal importance and goal attainability), and outcomes (subjective well-being) from a developmental perspective. We argue that people rate those goals as important and attainable that enable them to master developmental tasks, that they adapt their goals to personal capacities, and that goals predict subjective well-being after 2 and 4 years. The sample included 973 individuals (18–92 years old, $M = 43.00$ years) of whom 637 participated 2 years later and 573 participated 4 years later. Goal importance and well-being were assessed at all occasions and goal attainability at the first two occasions. Results indicated that age was negatively associated with importance and attainability of personal-growth, status, and work goals but positively associated with importance and attainability of prosocial-engagement goals. The association between goal importance and attainability was largely bidirectional over time; and goal attainability, rather than goal importance, was positively linked to later well-being. Implications of these findings are discussed in light of adult lifespan development. © 2019 European Association of Personality Psychology

Key words: life-goal importance; life-goal attainability; subjective well-being; adult-age differences; dual-process framework

Mature striving is linked to long-range goals. (Gordon W. Allport, 1955)

As people move through their adult years, they meet various challenges regarding their identity, social relations, and occupational pathways (Erikson, 1968). To successfully manage these challenges, people develop, maintain, and adjust their goals (e.g. Austin & Vancouver, 1996). Defined as 'desired states that people seek to obtain, maintain, or avoid' (Emmons, 1996, p. 314), goals are not set in stone but instead are adjusted to circumstances that emerge across the lifespan (Freund & Riediger, 2006). Accordingly, goals have been referred to as *personality in context* (Little, 1989) or *characteristic adaptations* (McAdams, 2015), expressing the idea that, in interaction with physical, cultural, or social contexts, people actively shape their development by allocating resources to specific life goals (Wiese & Freund, 2005). This, in turn, highlights the importance of contextualizing goals within broader life conditions, such as age-related concerns.

In the present research, we built on this argument and studied (i) age effects on the domains that people rate as important


and perceive as attainable (i.e. goal *content*) from the perspective of their compatibility with developmental tasks (Erikson, 1968; Havighurst, 1972); (ii) the longitudinal association between goal importance and goal attainability (i.e. goal *dynamics*) from the perspective of adaptations to personal capacities (Baltes, 1987, 1997; Brandstädter & Greve, 1994; Heckhausen, 1999); and (iii) the long-term consequences of goal importance and goal attainability for subjective well-being (i.e. goal *outcomes*) from the perspective of motivational underpinnings of subjective well-being across adulthood (Diener, 1994; Diener, Suh, Lucas, & Smith, 1999).

To our knowledge, the present study is the first to systematically assess major life goals' content, dynamics, and outcomes over time in a sample that covers the entire adult lifespan (i.e. age 18–92 years). Knowing how life goals' importance and attainability are distinct in different life domains across adulthood, how life goals are adjusted to personal capacities, and how goals are differentially linked to subjective well-being complements and expands on current research in both the goal and the lifespan literature.

Content of goals: Age differences in goal importance and goal attainability

Conceived as motivated agents (McAdams, 2015), individuals strive to develop themselves and are inclined to expand who they are. From this humanistic perspective (Maslow, 1954; Rogers, 1995), people expand their potential by setting a

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motivational agenda, which moves them toward internal representations of desired future outcomes or events, represented in life goals (Austin & Vancouver, 1996). In the present study, we focused on major life goals (such as starting a family) rather than on more specific strivings (such as dating a particular person) because major life goals set the compass that directs and guides the life course (Emmons, 1986) and, accordingly, shape personality development (McAdams, 2015).

Life goals as an example of a type of characteristic adaptation (McAdams, 2015) do not emerge in a contextual vacuum. Instead, they vary with changing circumstances, role expectations, and maturation over the life course (Elder, 1995; McAdams & Pals, 2006; Roberts & Wood, 2006). Consequently, life goals represent what individuals are planning and working on while they find themselves in a certain life period (Brunstein, Dangelmayer, & Schultheiss, 1996; Cantor & Kihlstrom, 1987). According to Erikson (1968) and Havighurst (1972), each life period includes *developmental tasks* that arise at a certain time in personal development and that contain age-graded normative expectations, which entail specific roles, positions, and obligations, reflecting an interplay between social demands and expectations, biological development and maturation, and personality (also Freund & Baltes, 2005; Hutteman, Hennecke, Orth, Reitz, & Specht, 2014; Little, Salmela-Aro, & Phillips, 2007; Nurmi, 1992). We, consequently, argue that developmental tasks will be reflected in an age-dependent relative importance that people allocate to certain life-goal domains.

More specifically, developmental tasks in young adulthood (roughly ages 18–40 years; Staudinger & Bluck, 2001) are characterized by a focus on growth (i.e. developmental gains; Heckhausen, Dixon, & Baltes, 1989) that enables young adults to gain information and to explore who they are. This growth orientation enables young adults to acquire new skills and to reach their full potential (Ebner, Freund, & Baltes, 2006; Havighurst, 1972). Moreover, it is usually in young adulthood that people enter the workforce, establish long-lasting friendships, and commit to their first long-term romantic relationship, which makes topics of work and social relations salient for the young adult (Havighurst, 1972; Nurmi, 1992). Thus, we expect young adults' developmental tasks to be reflected in the importance of personal-growth, social-relation, and work goals. Moreover, previous research has shown that extrinsic life goals (i.e. life goals directed at obtaining external rewards such as money, fame, and praise) tend to be expressed more in young adulthood than in other age groups (Deci & Ryan, 2000), which leads us to predict the importance of extrinsic goals (i.e. status goals) to be negatively linked to age.

In contrast to the proving grounds of young adulthood, in middle age (roughly ages 41–60 years; Staudinger & Bluck, 2001), adults pursue goals that secure, consolidate, and stabilize what has been established and that orient them toward the future of subsequent generations (Erikson, 1968; McAdams, 2015). For instance, middle-aged adults tend to value goals related to family and raising children, work, prosocial engagement, and passing traditions on to the next generation (Freund & Riediger, 2006; Havighurst, 1972; Neugarten & Datan, 1996). Accordingly, we expect

middle-aged adults to give importance to prosocial engagement, social-relation, and work goals.

The developmental tasks of older adults (roughly age 61 years and above; Staudinger & Bluck, 2001) are centred around the maintenance of a functional level in domains such as health or leisure (Ebner et al., 2006; Heckhausen et al., 1989), orienting older adults toward avoiding losses rather than acquiring potential gains (Freund, 2008; Ogilvie, Rose, & Heppen, 2001). In addition, given that the future tends to be perceived as limited in late adulthood, older adults usually follow goals that are present oriented, such as deepening close relationships (Carstensen, Isaacowitz, & Charles, 1999). Finally, older compared with younger adults tend to be more altruistic, for example, in more strongly valuing contributions to the public good and being more likely to donate money to a good cause (Freund & Blanchard-Fields, 2014). We therefore expect older adults to rate goals of health, prosocial engagement, and social relations as important.

Taken together, life stages with their normative expectations and structural opportunities yield developmental tasks that lay the ground for allocating differential importance to certain life goals (Hutteman et al., 2014). Building on this rationale, we predict that age shapes the relevance assigned to life goals: Importance of personal-growth, status, and work goals should be negatively associated with age, whereas importance of health and prosocial-engagement goals should be positively associated with age. As outlined, people of each life stage are inclined to value social-relation goals. Hence, we do not expect age differences in the importance ascribed to social-relation goals, although the motivation to value these goals might differ across age: The growth focus among young adults might shift to a focus on established and secured aspects of life in middle adulthood and to momentary rewards in older age. Despite these different motivations, social relationships are considered essential for individuals to thrive across the lifespan (e.g. Deci & Ryan, 2008) and should therefore reflect an important goal in each age group.

As well as goal importance, we investigated goal *attainability*, defined as the subjective perception of 'opportunity, control, and support' of goal pursuit (Brunstein, 1993, p. 1062). Given that goal importance and goal attainability dynamically interact with each other (Brandstädter & Rothermund, 2002), we expect goal attainability to vary with age in a similar manner to goal importance. We predict that age effects on goal attainability should show the same age-related pattern as age effects on goal importance: Attainability of personal-growth, status, and work goals should be negatively associated with age; attainability of health and prosocial-engagement goals should be positively associated with age; and attainability of social-relation goals should not be affected by age. One can expect a differential effect in the health domain, because—although health goals become more important with increasing age—older adults often have to deal with physical health issues, health impairment, and cognitive decline, which limit the resources they can devote to attaining their goals (Reynolds & Finkel, 2016). Yet we expect age to be positively related to health-goal attainability for the following reason: If people experience a discrepancy between their goals and the likelihood

of achieving these goals, they start to cope with this discrepancy (Brandtstädter & Rothermund, 2002; refer to the next section). Assuming that health goals become more important with increasing age at the same time that resources are shrinking, older adults might, for instance, rescale their aspirations in the health domain, develop more feasible health goals, and invest in these newly developed goals (Brandtstädter & Rothermund, 2002). These adjustment strategies likely render it possible not only to value health goals as important with increasing age but also to perceive them as attainable.

Goal dynamics: Association between goal importance and goal attainability over time

As indicated above, goals vary not only in their importance but also with regard to their perceived attainability (Atkinson, 1964; Tomasik, Knecht, & Freund, 2017). Self-regulation theories of development posit that people strive for control over their lives by balancing the importance and attainability of their goals (Baltes, 1987, 1997; Brandtstädter & Greve, 1994; Heckhausen, Schulz, & Wrosch, 1998). More specifically, the dual-process framework (Brandtstädter & Rothermund, 2002) proposes two modes of coping with the dynamics between the pursuit and the adjustment of goals, namely, the *assimilation mode* and the *accommodation mode*. Both modes illustrate two types of adaptive processes, which are complementary in that both intend to resolve a goal discrepancy, but they function in opposite ways (Brandtstädter, 1989; Brandtstädter & Renner, 1990; Brandtstädter & Rothermund, 2002; Rothermund & Brandtstädter, 2003).

The assimilation mode implies a purposeful and intentional change of individuals' own behaviour or their life circumstances. That is, when important goals appear less attainable, people tend to invest more heavily in the goal pursuit and to intentionally modify the situation (assimilation mode or primary control strategies; Brandtstädter & Rothermund, 2002; Heckhausen & Schulz, 1995; Heckhausen et al., 1998; Rothermund & Brandtstädter, 2003; Wrosch, Heckhausen, & Lachman, 2000). This is typically the case in young adulthood when enough resources are available to acquire new skills, to improve existing functions, and to seek environments that offer access to new resources (Brandtstädter & Rothermund, 2002; Ebner et al., 2006). For instance, a 19-year-old woman might have the goal of becoming a successful professional swimmer, so she practices on a nearly daily basis to achieve this goal. During competitions, however, she rarely wins a medal. She realizes that her important goal appears to be becoming less attainable. As a consequence, she begins to practice with a new trainer to learn a modified swimming technique, and she joins a more competitive swimming group. She invests more heavily in her goal in that she has purposefully and intentionally changed her behaviour and life circumstances.

As evident from the above, these assimilative efforts require available resources, such as the perception of having enough time, of receiving social and/or financial support, and of being in good physical and/or mental shape (Brandtstädter & Rothermund, 2002). As people age,

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however, these internal and external resources may shrink (Brandtstädter & Rothermund, 2002; Freund, 2008), and the ratio of expected gains to expected losses of resources becomes less favourable (Ogilvie et al., 2001). It is, thus, the adjustment of goals to these constraints and the lowering of aspirations that contribute to the maintenance of high goal attainability and to control in older adulthood (i.e. accommodation mode or secondary control strategies; Brandtstädter & Rothermund, 2002; Heckhausen & Schulz, 1995; Heckhausen et al., 1998; Rothermund & Brandtstädter, 2003; Wrosch et al., 2000). This mode typically implies eliminating blocked goals, rescaling aspirations, or funneling energies and investment into new, more feasible goals. For instance, a 72-year-old man might have the goal of being actively engaged in the political work of his community. For the last 20 years, he has participated in weekly meetings of his local government, given public speeches, and met various stakeholders and politicians to discuss current topics. Within the last 2 years, however, his ability to effortlessly give long speeches and travel long distances has decreased. While remaining actively engaged in community work, he has rescaled this goal. Now, he provides his expertise and knowledge from the back office through being a wise mentor for the next generation's politicians and a close advisor in speech writing.

As outlined, the balance between the assimilative and accommodative modes depends on the conditions and resources that individuals think are available in a specific life condition. We argue that age might be a moderating factor in this balance. We expect the associations between goal importance and goal attainability to be positive but to vary in how pronounced they are across adulthood. We assume that young adults more intensely invest in important goals, which will increase the perceived likelihood of attaining these goals (i.e. assimilation mode). Consequently, we predict that it is in younger age that goal importance predicts later goal attainability, and we expect this positive association to be negatively associated with age. In contrast, we hypothesize that older adults lower their aspirations and mentally decrease the importance of those goals that are no longer perceived as attainable (i.e. accommodation mode). Consequently, we predict that it is in older age that goal attainability predicts later goal importance, and we expect this positive association to be positively associated with age. Given that any life domain that is open to be modified can be addressed through these adaptive processes (Brandtstädter & Rothermund, 2002), we expect our hypotheses to apply to each of the investigated life-goal domains.

Goal outcomes: Goal importance and goal attainability as predictors of subjective well-being

It is well established that the pursuit of personally meaningful goals is advantageous for various indicators of subjective well-being (e.g. Brunstein, Schultheiss, & Maier, 1999; Deci & Ryan, 1985, 2008; Emmons, 1996; Emmons & King, 1988; C. Harris, Daniels, & Briner, 2003; Schmuck, Kasser, & Ryan, 2000). However, the study of

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goals for well-being has not been without controversy, because their role is ambiguous (Brandtstädter & Rothermund, 2002): While they motivate behaviour, give structure, and provide meaning, goals might also be a source of dissatisfaction when they are perceived as unattainable (especially when the goal remains important and no accommodative strategies have been applied). Thus, the link between goals and subjective well-being in light of both goal importance and goal attainability needs to be carefully investigated.

In line with previous theory (Diener, 1984; Diener et al., 1999; Lucas, Diener, & Suh, 1996), we understand subjective well-being as comprising a cognitive-evaluative component (global life satisfaction and domain-specific satisfaction) and an affective component (positive and negative affect). One way to investigate the consequences of life goals for subjective well-being is, for instance, to differentiate between intrinsically and extrinsically oriented goals (Deci & Ryan, 2000). On the basis of past theory and research (e.g. Kasser & Ryan, 1996), we define intrinsic goals as goals directed at the fulfilment of innate psychological needs such as relatedness, autonomy, and competence, including goals for meaningful relationships, community contributions, personal growth, and health. We conceptualize extrinsic goals as those directed at the desire for fame, image, and wealth, mapping on status goals. Work goals, finally, most likely reflect a combination of intrinsic and extrinsic goals.

Previous research suggests that intrinsic life goals are particularly conducive to well-being (e.g. Brunstein, 1993; Deci & Ryan, 1985). Extrinsic goals, in contrast, tend to work against people's well-being given that these goals are focused on obtaining external rewards and approbation from others, thereby giving the activity an instrumental character to achieve an intended consequence (e.g. Deci & Ryan, 1985; Kasser & Ryan, 1993, 1996; Schmuck et al., 2000). For the present research, we expect a positive association between goal importance and subjective well-being for the intrinsic goal domains and a negative association for the extrinsic goal domains.

With respect to goal attainability as a predictor of subjective well-being, we base our hypotheses on findings from research on locus of control (Rotter, 1966). While an internal locus of control implies that a person holds the belief that his or her own ability, effort, or actions determine what happens, an external locus of control reflects that fate, luck, or outside forces are responsible for what happens (Rotter, 1966). People tend to be more satisfied if they perceive a goal as attainable and feel a sense of control (e.g. Judge & Bono, 2001; Rodin, 1986; Rodin & Langer, 1977). Applying this to the present research, we expect that people who perceive their goals as attainable will indicate higher levels of subjective well-being. Here, we again differentiate between intrinsic and extrinsic goals. A previous finding demonstrated that the importance and attainability of intrinsic goals are positively linked to positive affect, while the importance and attainability of extrinsic goals are negatively linked to positive affect (Kasser & Ryan, 1996). No effects were found for the link between goal importance/attainability of

intrinsic/extrinsic goals and negative affect in this study (Kasser & Ryan, 1996). Although these findings provide insights into the relevance of intrinsic and extrinsic goals for the affective component of subjective well-being (as well as, among others, vitality, depression, and physical symptoms), the study was limited in that other, more cognitive aspects of subjective well-being were not included (Kasser & Ryan, 1996). In addition, the study covered a short time span (a maximum of 7 days in Study 2), which highlights the need for a more nuanced investigation of the longitudinal prediction of the effects of goals on later subjective well-being. This leads us to expand the long-term prediction of an effect of goal attainability to diverse indicators of subjective well-being.

Finally, in line with the life-course perspective of the present study, we test whether age moderates the association between goal importance and subjective well-being and/or between goal attainability and subjective well-being. So far, there is a limited amount of research on possible age-related differences in the link between goal importance/goal attainability and subjective well-being. In their study, Kasser and Ryan (1996) found no support for a moderating effect between goal importance/goal attainability and the affective component of well-being. However, these findings bear two limitations. First, although the study sample included participants with a wide age range (18–79 years), it was a small sample of 100 adults, and age effects might have been underestimated. Second, the cognitive-evaluative component of subjective well-being was not included in the study. Hence, we seek to shed further light on possible moderating effects of age on the association between goal importance/goal attainability and different indicators of subjective well-being.

We have now established links between importance and attainability of life goals with life satisfaction, positive affect, and negative affect for the present investigation. Yet we want to go one step further and focus on an additional aspect of the cognitive-evaluative component of well-being: Domain-specific satisfaction. Although past findings have demonstrated a consistent association between certain life goals and well-being, they often tend to overlook that the link between goals and satisfaction can differ between life domains (Diener, 1994; Vansteenkiste et al., 2007). In other words, rating goals in the work domain as important and perceiving them as attainable might have positive ramifications for satisfaction in the work domain (e.g. Lent & Brown, 2006; Maier & Brunstein, 2001; Roberson, 1990) but not in the family domain. This is the case because work goals lead to allocation of resources to the work domain but not to the relationship and family domains (e.g. Wiese & Freund, 2005). Conversely, relationship goals might be positively linked to satisfaction in the relationship domain (e.g. Sanderson & Evans, 2001) but not to satisfaction in the occupational domain.

Given that goals require the allocation of resources to particular life domains at the expense of allocations to other domains, we expect to find thematic associations between the importance and attainability of goal domains and satisfaction within given life domains (e.g. work goals

predicting satisfaction with work but not satisfaction with social relationships). In terms of life domains, we focus on (i) occupational performance, (ii) health, and (iii) interpersonal relations as salient and important domains of an adult's life. For (i) occupational performance, we consider that people of different ages are confronted with different aspects of occupational performance and investigate both satisfaction with education (likely to be present for young adults) and satisfaction with work [likely to be (or to have been) present for middle-aged and older adults]. For (ii) health, we assess overall satisfaction with one's health. Finally, for (iii) interpersonal relations, previous research has shown that social contexts change over the lifespan and, more specifically, that social networks decrease after a person's second decade of life (Wrzus, Hänel, Wagner, & Neyer, 2013). However, findings of this study also suggest taking a differentiated perspective on a person's social network given that friendship networks decrease across age but family networks remain stable (Wrzus et al., 2013). We thus acknowledge the manifold character of social contexts and differentiate between three areas of interpersonal relationships, namely, satisfaction with family life, satisfaction with one's romantic relationship, and satisfaction with friendships.

In line with the developmental focus of this paper, we again test for moderating effects of age. We hypothesize that goal–outcome associations are stronger for goal domains that correspond to developmental tasks at a particular age. This might be the case because focusing on goals that correspond to developmental tasks enables people to fulfil these tasks, which is likely experienced as rewarding. Consequently, we expect that the link between work goals and satisfaction in the work domain decreases with age, that the link between health goals and satisfaction in the health domain increases with age, and that the link between social goals and satisfaction in the social domain remains stable across adulthood.

THE PRESENT STUDY

The aim of the present study is to position major life goals' content, dynamics, and outcomes in the context of a lifespan perspective. To that aim, we explore three major research strands.

Effects of age on goal importance and goal attainability (goal content)

Hypothesis 1a: Importance of work, status, and personal-growth goals is negatively associated with age, and importance of health and prosocial-engagement goals is positively associated with age. We do not expect age effects on importance of social-relation goals.

Hypothesis 1b: Attainability of work, status, and personal-growth goals is negatively associated with age, and attainability of health and prosocial-engagement goals is positively associated with age. We do not expect age effects on attainability of social-relation goals.

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The association between goal importance and goal attainability over 2 years (goal dynamics)

Hypothesis 2a: Goal importance and goal attainability are reciprocally linked to each other; that is, goal importance predicts later goal attainability, and goal attainability predicts later goal importance.

Hypothesis 2b: We expect these associations to be moderated by age in that (i) the association between goal importance and later goal attainability is weaker with higher age, while (ii) the association between goal attainability and later goal importance is stronger with higher age.

Goal importance and goal attainability as predictors of subjective well-being (goal outcomes)

Hypothesis 3a: Importance of intrinsic life goals is positively linked to later subjective well-being (i.e. life satisfaction, and positive and negative affect), and importance of extrinsic life goals is negatively linked to later subjective well-being.

Hypothesis 3b: Attainability of intrinsic life goals is positively related to later subjective well-being (i.e. life satisfaction, and positive and negative affect), and attainability of extrinsic life goals is negatively related to later subjective well-being.

Hypothesis 3c: For domain-specific satisfaction, we expect a thematic link between goal domains and their respective satisfaction domains: Importance and attainability of work goals predict satisfaction with the occupational domain; importance and attainability of health goals predict health satisfaction; and importance and attainability of social-relation goals predict satisfaction in the social domain. These associations are stronger at the age at which the goal is valued as more important and attainable.

METHOD

Sample and general procedure

Data for the present study were obtained from the longitudinal Co-Development in Personality (CoDiP)¹ study that was conducted in the German-speaking parts of Switzerland. Ethical approval for the CoDiP study was received from the regional ethics committee of Basel (approval number: 175/09) at the University of Basel, Switzerland. Necessary supplemental materials (i.e. overview of study variables and data analysis script) are stored at a public and open-access repository (accessible through the following link: <https://osf.io/s2w3n/>).

Individuals from different age groups were recruited either through university and vocational schools (young adults) or through lectures given as part of a lifelong learning course aimed at seniors (older adults). Individuals were asked to invite their parents and grandparents (in the case of young adults) and their children and grandchildren (in the case of older adults) to participate. Thus, the final

¹Thirteen published papers have been based on data from this research project, but no study has investigated the hypotheses that are the focus of the present study.

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sample of the study included family members of three age groups (young, middle-aged, and older adults) who participated at three measurement occasions (referred to as Time 1, Time 2, and Time 3) with intervals of 2 years. At all three measurement occasions, participants provided self-reports on goal importance and subjective well-being (i.e. life satisfaction, positive affect, negative affect, and domain-specific satisfaction). Goal attainability was assessed at Time 1 and Time 2.

Participants

At Time 1, the sample included 973 individuals above age 18 years from 341 families, of whom 637 participated at Time 2 and 573 participated at Time 3. The age of participants at Time 1 ranged from 18 to 92 years ($M = 43.00$ years; $SD = 22.08$) with 57.6% identifying as female and 42.4% as male. To test for attrition effects, we compared participants who participated after Time 1 (continuers) with those who participated only at Time 1 (noncontinuers). Continuers, compared with noncontinuers, were more often female (62.7% vs. 53.8%), were older ($M = 44.52$ vs. $M = 39.45$ years), $t(972) = -3.33$, $p = .001$, and indicated lower scores in importance of work goals ($M = 3.30$ vs. $M = 3.40$), $t(955) = -2.66$, $p = .01$, and lower scores in importance of status goals ($M = 2.06$ vs. $M = 2.22$), $t(969) = -4.53$, $p < .001$. Continuers, compared with noncontinuers, also reported lower scores in attainability of status goals ($M = 2.33$ vs. $M = 2.47$), $t(965) = -3.31$, $p = .001$, positive affect ($M = 3.60$ vs. $M = 3.68$), $t(972) = -2.30$, $p = .02$, and negative affect ($M = 1.72$ vs. $M = 1.83$), $t(971) = -2.67$, $p = .01$. No other differences were statistically significant (all $ps \geq .05$).

Within the sample of continuers, we further compared participants who continued to Time 3 (long-term continuers) with those who participated at Time 1 and Time 2 (short-term continuers). Long-term continuers, compared with short-term continuers, were more often female (64.6% vs. 45.5%) and were significantly more satisfied with their life at Time 1 ($M = 3.99$ vs. $M = 3.80$), $t(688) = 2.84$, $p = .01$, and at Time 2 ($M = 4.01$ vs. $M = 3.84$), $t(628) = 2.45$, $p = .02$. Long-term continuers were also more satisfied with their work domain at Time 1 ($M = 7.52$ vs. $M = 6.87$), $t(357) = 4.47$, $p < .001$, with their work domain at Time 2 ($M = 7.52$ vs. $M = 6.87$), $t(415) = 2.43$, $p = .02$, and with their health domain at Time 2 ($M = 7.52$ vs. $M = 6.87$), $t(628) = 2.82$, $p = .01$. No other differences were statistically significant (all $ps \geq .05$).

Measures

Life goals

Life goals were assessed with an adapted version of the Aspiration Index (Deci & Ryan, 1997; Kasser & Ryan, 1993) in its German version (Klusmann, Trautwein, & Lüdtke, 2005). The Aspiration Index measures individuals' aspirations concerning the importance and attainability of seven broad goal domains. The domains cover four intrinsic aspirations (i.e. health, community, personal growth, and social relations) and three extrinsic aspirations (i.e. fame, image,

and wealth). In addition to the original seven domains, we assessed goals covering family, generativity, and work (e.g. 'to have an intact family life' for family goals, 'to campaign for the general welfare' for generativity goals, and 'to be successful in my job' for work goals). For each of the 10 life-goal domains, participants rated four items (Table S1). Goal importance was measured with 'How important is this to you?', and goal attainability was measured with 'How likely is it that this will happen in your future?' The 4-point assessment scales ranged from 1 (*not at all important*) to 4 (*very important*) for goal importance and from 1 (*very unlikely*) to 4 (*very likely*) for goal attainability.

Factor analysing across life goals

To reduce the number of life goals and to extract higher-order patterns that illustrate the relations among the goal variables, we applied exploratory factor analysis for goal importance and goal attainability at Time 1 and Time 2. Factors were treated as orthogonal (i.e. varimax rotation). For goal importance, H. F. Kaiser's (1960) eigenvalue-greater-than-1 rule suggested two factors, Cattell's (1966) scree plot suggested three factors, and parallel analysis suggested four factors. We examined the goodness-of-fit indices for each of these solutions. For the two-factor solution, both the Tucker-Lewis index (TLI) and the root mean square error of approximation (RMSEA) indicated a poor model fit of this structure (TLI = 0.749 and RMSEA = 0.117 at Time 1, TLI = 0.662 and RMSEA = 0.140 at Time 2). For the three-factor solution, the goodness-of-fit indices indicated a better model fit (TLI = 0.875 and RMSEA = 0.082 at Time 1, TLI = 0.886 and RMSEA = 0.082 at Time 2), as they did for the four-factor solution (TLI = 0.898 and RMSEA = 0.074 at Time 1, TLI = 0.926 and RMSEA = 0.066 at Time 2). On the basis of these model fits, we have chosen the model with the best fit indices, the one with the four-factor solution. Table S2 presents the standardized loadings extracted from the factor analysis at Time 1 and Time 2. In addition, to maintain the developmental-task focus of this study and on the basis of their factor loadings, we next treated health and personal-growth goals as their own life-goal domains, which brought a final solution of six life-goal domains. As a result of this procedure, health goals were conceived as a single category (Life-Goal Domain 1) separate from personal-growth goals (Life-Goal Domain 2). Community and generativity goals were grouped under prosocial-engagement goals (Life-Goal Domain 3) and family and relationship goals under social-relation goals (Life-Goal Domain 4). Wealth, fame, and image goals were grouped under status goals (Life-Goal Domain 5), and work goals remained in their own category (Life-Goal Domain 6).

We applied the same procedure for goal attainability, which also showed the best model fit for the four-factor solution (TLI = 0.933 and RMSEA = 0.072 at Time 1, TLI = 0.921 and RMSEA = 0.081 at Time 2). The standardized loadings of these factor analyses are also provided in Table S2. To obtain the same developmental-task domains for goal attainability as we had for goal importance, we treated

health and personal-growth goals as their own life-goal domains. The other life goals were interpreted as shown in the factor solution, resulting in the same six categories for goal attainability as for goal importance. Internal consistency of importance and attainability of life-goal domains ranged from Cronbach's $\alpha = .70$ to $.90$. Personal growth had a lower internal consistency of $\alpha = .50$ for importance and of $\alpha = .56$ for attainability.

Life satisfaction

To measure global cognitive-evaluative judgements of subjective well-being, participants were asked to rate their life satisfaction, assessed with the German translation of the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; Glaesmer, Grande, Braehler, & Roth, 2011). The questionnaire included five items (e.g. 'The conditions of my life are excellent.') that were rated on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The scale had an internal consistency of $\alpha = .84$.

Positive and negative affect

The affective component of well-being was assessed with the German translation of the Positive and Negative Affect Schedule (Krohne, Egloff, Kohlmann, & Tausch, 1996; Watson, Clark, & Tellegen, 1988). Participants rated their general feelings and emotions on the basis of 10 items for positive affect (e.g. 'active', 'interested', and 'enthusiastic') and 10 items for negative affect (e.g. 'distressed', 'hostile', and 'afraid'). Items were rated on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*extremely*). Cronbach's alpha for positive affect was $\alpha = .84$ and for negative affect $\alpha = .83$, suggesting good internal consistency.

Domain-specific satisfaction

Domain-specific satisfaction was assessed with 11 items on the basis of the German Socio-Economic Panel and the Swiss Household Panel. Participants rated their satisfaction with work and education (occupational domain), with their health (health domain), and with family life, their romantic relationship, and friendships (social domain). Satisfaction for each domain was rated with one item on an 11-point Likert scale ranging from 0 (*completely unsatisfied*) to 10 (*completely satisfied*). Given that not all domains were relevant for each participant (e.g. satisfaction with work was applicable only if the participant was actively involved in the labour market, or satisfaction with romantic relationship only if committed to a romantic partner), sample sizes varied from domain to domain.

Data analysis approach

Given that our sample included participants from the same family (i.e. young-adult children, parents, and grandparents), we first tested for interrelations between family members on the key variables. Intraclass correlation coefficients ranging between 0.14 (life satisfaction) and 0.55 (importance of social-relation goals) supported the assumption of nonindependence of data. Consequently, to conduct statistical analyses, we used a multilevel modelling approach that takes

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nonindependence of data into account.² We applied a two-level approach, in which Level 2 represents the family and Level 1 the individual. Controlling for variation between families on Level 2, Level 1 represents individuals' variations on the relevant key variables. Given that variations between families were not the focus of the present paper, we present results on Level 1. Multilevel analyses were conducted by using the lme4 package in R (Bates, Maechler, Bolker, & Walker, 2015), and figures were created by making use of the effects package (Fox et al., 2018) and the ggplot package in R (Wickham, 2016). Johnson–Neyman analyses to explore the regions of significance for the age moderations were conducted by using the jtools package in R (Long, 2018). For all analyses, age was used as continuous variable. Life-goal predictors, age, and outcomes were grand mean centred. Missing values were handled with the maximum likelihood estimation approach.

For the hypotheses on goal *content* (Hypotheses 1a and 1b), we applied multilevel regression analyses in two separate models. In the first model, the dependent variable was goal importance; in the second model, the dependent variable was goal attainability. In both models, the predictor was age (continuous linear effects and squared effects). Results represent effects at Time 1.³

For the hypotheses on goal *dynamics* (Hypotheses 2a and 2b), we applied multilevel regression analyses in two separate models for goal importance and goal attainability. In the first model, we tested the stability of the variable of interest (i.e. earlier goal importance on later goal importance as well as earlier goal attainability on later goal attainability).

²Please note that we additionally sought to address Hypotheses 2 and 3 with a latent-variable approach by making use of moderated multilevel structural equation modelling (MSEM) with the lavaan package in R (Rosseel, 2012). However, we were not able to run these models because the lavaan package so far does not allow one to include an interaction term between a manifest variable (i.e. age) and a latent variable (e.g. goal importance). Thus, we applied MSEM without age moderation for our test of Hypotheses 2 and 3 (which, consequently, meant that we were not able to test age moderations). Figures S1 and S2 depict the model structure that was tested for these hypotheses. Goodness-of-fit indices of various models were examined with the fit indices of the comparative fit index and the RMSEA. The model is considered to fit the data well if comparative fit index is above 0.95 and RMSEA is below 0.08 (Schermelleh-Engel, Moosbrugger, & Müller, 2003). The resulting goodness-of-fit indices of all models tested are shown in Table S3. As evident from this table, the results revealed unsatisfactory fit indices. To improve the model fits, we sought to set loadings equal (e.g. Item 1 of health-goal importance at Time 1 and Item 1 of health-goal importance at Time 2). To that aim, we calculated the respective measurement invariance for all models. These results are presented in Tables S4 and S5. As shown in these tables, configural, metric, and scalar invariance suggested invariance across measurement occasions (except for metric invariance of social-relation goal attainability and work-goal attainability), suggesting setting loadings equal. However, we again ran into problems of unacceptable model fit indices (Tables S4 and S5), which kept us from setting loadings equal in the MSEMs. Given these caveats regarding (i) statistical package constraints, (ii) model specification, and (iii) unacceptable model fits, we did not test our hypotheses with an MSEM approach. Hence, the results shown in this manuscript are based on analyses employing manifest variables.

³To ascertain the robustness of our findings, we tested the same hypotheses by making use of Time 2 data ($N = 637$). Replication analyses are presented in Table S6. For linear age effects, the results revealed that linear age effects on goal importance and goal attainability were replicated (except for a non-significant linear age effect on health-goal importance). For squared age effects, the findings replicated the positive age effect on the attainability of prosocial-engagement goals. None of the other squared effects were significantly replicated (all $ps > .05$).

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In the second model, we regressed goal importance at Time 1 on goal attainability at Time 2, and vice versa, controlling for the 2-year stability of the later variable. In both models, we included the interaction effect of goal importance and age as well as the interaction effect of goal attainability and age in the model.

For the hypotheses on goal *outcomes* (Hypotheses 3a, 3b, and 3c), we conducted multilevel regression analyses for each outcome variable in separate models. The dependent variables were life satisfaction, positive affect, negative affect, and domain-specific satisfaction (i.e. work, education, health, family, relationship, and friendship satisfaction). We calculated models for outcomes at Time 2 and Time 3, controlling for the stability of the outcome. In each model, the predictors were goal importance at Time 1, goal attainability at Time 1, the interaction between goal importance and age, and the interaction between goal attainability and age.⁴

We are aware of the problems associated with multiple testing and note that the present study includes a considerable number of analyses. However, rather than lowering the *p* level and narrowing the confidence interval (CI), we have decided to report all analyses at the conventional *p* level of 5% and at a CI of 95% and to interpret those results that show a consistent and robust pattern (Perneger, 1998).

RESULTS

Descriptive statistics and preliminary analyses

Table 1 shows the means and standard deviations of goal importance, goal attainability, and well-being at Time 1, as well as their intercorrelations. As evident from this table, with one exception, all goal domains were intercorrelated with each other in both their importance and their attainability. The exception was status goals, which showed fewer correlations for both importance and attainability. The table also reveals that most goal domains were positively related to indicators

⁴Although not in the scope of the present investigation, one might assume interaction effects between goal importance and goal attainability in the prediction of later subjective well-being. We see this particularly likely because important goals, for which no substitute is available, may persist in binding attention (Brandstädter & Rothermund, 2002). This attention to blocked goals, in turn, likely causes rumination and may thus be negatively linked to well-being. Hence, one could expect (i) goals to be positively linked to well-being if they are both important and attainable, (ii) goals to be negatively linked to well-being if important goals are not attainable or if attainable goals are not important, and (iii) goals to be unrelated to well-being if they are neither important nor attainable. To test these assumptions, we included the interaction effects between goal importance and goal attainability in all models that predicted subjective well-being (i.e. for life satisfaction, positive affect, negative affect, work satisfaction, educational satisfaction, family satisfaction, relationship satisfaction, friendship satisfaction, and health satisfaction). From all investigated models (54 models for well-being at Time 2 and 54 models for well-being at Time 3), we found six significant effects. More specifically, interaction effects between goal importance and goal attainability were found in the prediction of status goals on positive affect at Time 2 ($b = 0.13, p = .03, 95\% \text{ CI } [0.002, 0.25]$), of social-relation goals on work satisfaction at Time 3 ($b = -1.84, p = .03, 95\% \text{ CI } [-3.59, -0.36]$), of status goals on work satisfaction at Time 3 ($b = -0.67, p = .04, 95\% \text{ CI } [-1.37, -0.05]$), of personal-growth goals on health satisfaction at Time 3 ($b = 1.46, p = .006, 95\% \text{ CI } [0.38, 2.52]$), of social-relation goals on family satisfaction at Time 3 ($b = -1.21, p = .02, 95\% \text{ CI } [-2.24, -0.13]$), and of health goals on family satisfaction at Time 3 ($b = -0.77, p = .04, 95\% \text{ CI } [-1.58, -0.04]$).

of subjective well-being with the exception of status goals and work goals, for which fewer correlations were observed. Means and standard deviations of goal importance and goal attainability at Time 2 as well as means and standard deviations of well-being at Time 2 and Time 3 are provided in Table S7.

Content of goals: Age effects on goal importance and goal attainability

Linear and squared age effects on goal importance and goal attainability are presented in Table 2. Age exhibited significant effects on goal importance in all life-goal domains: Age had a negative linear effect on importance of personal-growth, social-relation, status, and work goals, whereas it had a positive linear effect on importance of health and prosocial-engagement goals. Further, age had a positive squared effect on status goals, while it exhibited a negative squared effect on work goals. No other significant squared effects were observed (all *ps* > .05). Figure 1 illustrates the linear and squared age effects on goal importance. Except for the negative age effect on social-relation goals, the present results support Hypothesis 1a.

For goal attainability, age exhibited fewer effects: Age had a negative linear effect on the attainability of personal-growth, status, and work goals and a positive effect on the attainability of prosocial-engagement goals. Further, age exhibited a negative squared effect on personal-growth, prosocial-engagement, status, and work goals. Neither linear nor squared age effects were observed for attainability of social-relation and health goals. Figure 2 illustrates the linear and squared effects that age exhibited on goal attainability. Except for the nonsignificant effect on health goals, these findings support Hypothesis 1b.

Goal dynamics: Association between goal importance and goal attainability over time

Next, we tested the reciprocal association between goal importance and goal attainability over a time span of 2 years, which is shown in Table 3. Goal importance and goal attainability were fairly stable in all life-goal domains across the two measurement occasions. In addition, goal importance and goal attainability predicted each other significantly over time: Earlier goal attainability positively predicted later goal importance in the life-goal domains of health, personal growth, and social relations. For the inverse direction—earlier goal importance on later goal attainability—all associations were significant in a positive direction.

Age moderations. We observed two significant age moderations, both within the status-goal category. First, age moderated the link between earlier status-goal importance and later status-goal importance ($b = 0.003, p = .02, 95\% \text{ CI } [0.001, 0.005]$). The Johnson–Neyman analysis (Johnson & Fay, 1950) to obtain areas of significance revealed that it was within participants' entire age range that slopes of status-goal importance were significant (at $p = .05$). The magnitude of these slopes, however, was slightly stronger with higher age, that is, when age was

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Table 1. Means and standard deviations of goal importance, goal attainability, and subjective well-being at Time 1 and their intercorrelations

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
Goal importance																								
1 Health	3.63	0.40																						
2 Personal growth	3.51	0.39	.28																					
3 Prosocial engagement	3.11	0.49	.25	.34																				
4 Social relations	3.71	0.35	.36	.33	.33																			
5 Status	2.11	0.51	.17	.17	-.03	.17																		
6 Work	3.33	0.57	.17	.27	.06	.27	.40																	
Goal attainability																								
7 Health	3.00	0.50	.38	.12	.10	.13	.16	.17																
8 Personal growth	3.18	0.42	.14	.44	.18	.18	.05	.20	.38															
9 Prosocial engagement	2.89	0.46	.14	.20	.60	.26	-.04	.07	.34	.44														
10 Social relations	3.33	0.44	.24	.19	.27	.55	.08	.16	.36	.44	.43													
11 Status	2.38	0.63	.07	.03	.00	.11	.29	.19	.21	.26	.30	.23												
12 Work	3.03	0.58	.10	.17	.10	.12	.18	.61	.29	.43	.31	.35	.42											
Subjective well-being																								
13 Life satisfaction	3.94	0.69	.15	.12	.14	.20	-.04	.09	.29	.39	.25	.41	.14	.29										
14 Positive affect	3.62	0.55	.19	.27	.17	.16	.13	.25	.32	.46	.31	.33	.24	.34	.41									
15 Negative affect	1.75	0.57	-.05	.02	-.05	.01	.26	.09	-.13	-.25	-.16	-.18	-.03	-.13	-.43	-.17								
16 Work satisfaction	7.29	2.11	.12	.09	.11	.11	.03	.22	.19	.21	.21	.20	.15	.37	.38	.33	-.23							
17 Education satisfaction	7.37	2.05	.04	.08	.06	.09	-.05	.16	.09	.23	.15	.18	.11	.28	.33	.26	-.18	.53						
18 Health satisfaction	7.50	2.15	.11	.08	-.02	.06	.05	.17	.42	.19	.10	.18	.08	.15	.28	.28	-.15	.18	.12					
19 Family satisfaction	7.96	2.03	.14	.07	.13	.26	-.02	.03	.10	.19	.15	.41	.06	.08	.44	.24	-.22	.26	.18	.19				
20 Friendship satisfaction	8.10	1.92	.08	.04	.14	.22	-.01	.03	.18	.20	.19	.36	.11	.12	.40	.23	-.22	.26	.17	.18	.35			
21 Relationship satisfaction	8.23	2.02	.09	.04	.06	.31	-.04	.08	.09	.18	.11	.51	.08	.14	.32	.10	-.16	.09	.18	.18	.47	.31		

Note: *N* = 973. Correlation coefficients in bold are significant (*p* < .05). Life-goal domains were as follows: health goals, personal-growth goals, prosocial-engagement goals (community and generativity goals), social-relation goals (family and relationship goals), status goals, and work goals. Goal importance and goal attainability were assessed on a 4-point Likert scale (from 1 to 4); life satisfaction, positive affect, and negative affect were assessed on a 5-point Likert scale (from 1 to 5); and domain-specific satisfaction was assessed on an 11-point Likert scale (from 0 to 10).

1 *SD* above the sample mean (66.63 years; *b* = 0.80, *p* < .001, 95% CI [0.72, 0.88]), compared with when age reflected the sample mean (44.75 years; *b* = 0.74, *p* < .001, 95% CI [0.69, 0.79]) or was 1 *SD* below the sample mean (22.88 years; *b* = 0.68, *p* < .001, 95% CI [0.61, 0.75]).⁵

Second, age moderated the link between earlier status-goal importance and later status-goal attainability (*b* = 0.006, *p* = .01, 95% CI [0.001, 0.01]). We found that among participants older than 29.33 years, higher importance of status goals predicted higher attainability of status goals; this effect was more pronounced the older participants were.

These results mainly support Hypothesis 2, arguing for a positive association between goal importance and goal attainability over an interval of 2 years. This association was more pronounced for the predictive effects of earlier goal importance on later goal attainability (than vice versa) and was largely independent of age.

Goal outcomes: Goal importance and goal attainability as predictors of subjective well-being

Addressing the predictive validity of goal importance and goal attainability on subjective well-being, we tested predictive effects on later subjective well-being (i.e. life

satisfaction, positive affect, negative affect, and domain-specific satisfaction) after intervals of 2 and 4 years. Here, we provide tables for the prediction of well-being at Time 2, while tables for the prediction of well-being at Time 3 are shown in Tables S8, S9, and S10.

Life satisfaction

The first section of Table 4 shows the predictive effects of goal importance and goal attainability on life satisfaction at Time 2, controlling for life satisfaction at Time 1. While no main effect was observed of earlier goal importance on later life satisfaction, earlier goal attainability showed significant predictive validity: Attainability of health, personal-growth, prosocial-engagement, and social-relation goals was positively associated with life satisfaction at Time 2. For life satisfaction at Time 3, earlier attainability of personal-growth goals (*b* = 0.24, *p* < .001, 95% CI [0.12, 0.36]) and social-relation goals (*b* = 0.20, *p* = .001, 95% CI [0.08, 0.31]) remained a significant positive predictor, while attainability of health and prosocial-engagement goals was no longer significantly predictive (Table S8).

Age moderations. We observed one significant age moderation for the association between earlier goal importance/goal attainability and later life satisfaction: Age moderated the link between earlier work-goal importance and life satisfaction at Time 2 (*b* = -0.004, *p* = .04, 95% CI [-0.008, -0.001]). We found that among participants younger than 21.85 years, higher importance of work goals

⁵Please note that the overall sample mean indicated in the Abstract and Method section (*M* = 43.00 years) is slightly higher than the sample mean for testing Hypothesis 2 indicated here. This is due to the lower sample size for testing Hypothesis 2 (*N* = 637) compared with the overall sample size (*N* = 973) referred to in the Abstract and the description of the methods.

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Table 2. Linear and squared effects of age on goal importance and goal attainability at Time 1

Variable	Linear effects				Squared effects			
	<i>b</i>	<i>SE</i>	95% CI	<i>p</i>	<i>b</i>	<i>SE</i>	95% CI	<i>p</i>
Goal importance								
Health	0.02	0.006	[0.01, 0.03]	.003	0.003	0.003	[-0.003, 0.008]	.32
Personal growth	-0.02	0.005	[-0.03, -0.01]	<.001	-0.002	0.003	[-0.007, 0.004]	.59
Prosocial engagement	0.04	0.007	[0.02, 0.05]	<.001	-0.001	0.003	[-0.009, 0.006]	.69
Social relations	-0.03	0.005	[-0.03, -0.02]	<.001	-0.002	0.003	[-0.007, 0.002]	.47
Status	-0.07	0.006	[-0.09, -0.06]	<.001	0.01	0.003	[0.003, 0.018]	.004
Work	-0.11	0.008	[-0.12, -0.09]	<.001	-0.001	0.004	[-0.02, -0.002]	.02
Goal attainability								
Health	-0.01	0.007	[-0.02, 0.01]	.29	0.00001	0.003	[-0.007, 0.008]	.97
Personal growth	-0.02	0.001	[-0.03, 0.01]	.003	-0.008	0.003	[-0.01, -0.002]	.01
Prosocial engagement	0.02	0.006	[0.01, 0.04]	<.001	-0.01	0.003	[-0.02, -0.01]	<.001
Social relations	-0.01	0.006	[-0.02, 0.01]	.08	-0.004	0.003	[-0.01, 0.002]	.19
Status	-0.05	0.008	[-0.06, -0.02]	<.001	-0.02	0.004	[-0.03, -0.01]	<.001
Work	-0.06	0.008	[-0.07, -0.04]	<.001	-0.02	0.004	[-0.02, -0.01]	<.001

Note: *N* = 973. CI, confidence interval. Significant results (*p* < .05) are shown in bold. Age is scaled in decades. For goal importance, testing Model 1 (only linear effects) against Model 2 (linear and squared effects), the combined model fit the data significantly better in the domains of status goals, $\chi^2(1, 973) = 8.13, p = .004$, and work goals, $\chi^2(1, 973) = 5.61, p = .02$. For goal attainability, testing Model 1 (only linear effects) against Model 2 (linear and squared effects), results revealed that Model 2 fit the data significantly better than did Model 1 in the domains of personal growth, $\chi^2(1, 973) = 6.38, p = .01$, prosocial engagement, $\chi^2(1, 973) = 15.76, p < .001$, status, $\chi^2(1, 973) = 9.93, p = .002$, and work, $\chi^2(1, 973) = 11.21, p < .001$.

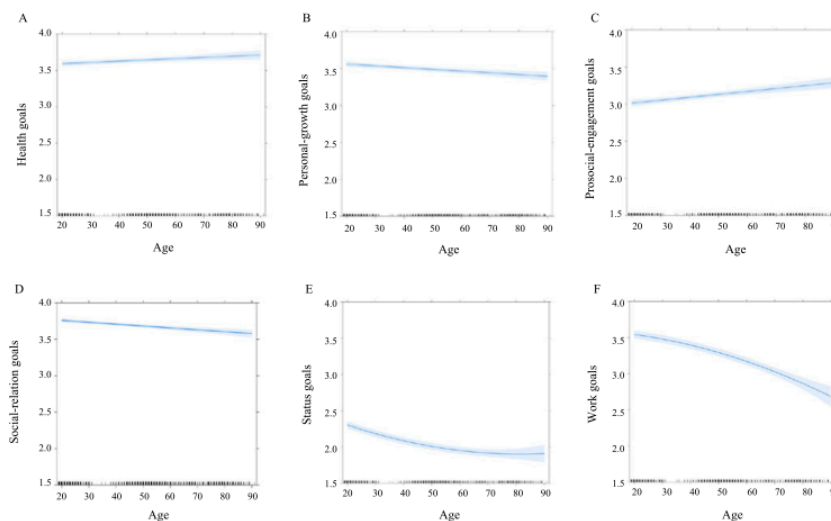


Figure 1. Effects of age on goal importance in six life-goal domains. Areas in light blue display the 95% confidence intervals. For Models A, B, C, and D, linear effects fit the data sufficiently, while for Models E and F, the combined model of linear and squared effects fit the data better. [Colour figure can be viewed at wileyonlinelibrary.com]

predicted higher life satisfaction and that this effect was more pronounced the younger participants were.

Positive affect

As shown in the second section of Table 4, positive affect at Time 2 was negatively predicted by earlier importance of personal-growth goals and social-relation goals, while it was positively predicted by attainability of all life-goal domains. For positive affect at Time 3, importance of prosocial-engagement goals (*b* = 0.10, *p* = .03, 95% CI [0.01, 0.21]) as well as attainability of personal-growth goals

(*b* = 0.12, *p* = .03, 95% CI [0.02, 0.23]) and social-relation goals (*b* = 0.14, *p* = .01, 95% CI [0.02, 0.24]) were significant positive predictors (Table S8).

Age moderations. We observed five significant age moderations for the association between earlier goal importance/goal attainability and later positive affect. First, age moderated the link between the importance of personal-growth goals and positive affect at Time 2 (*b* = 0.005, *p* = .02, 95% CI [0.001, 0.01]). It was among participants younger than 49.19 years that higher importance of personal-growth goals predicted lower positive affect and

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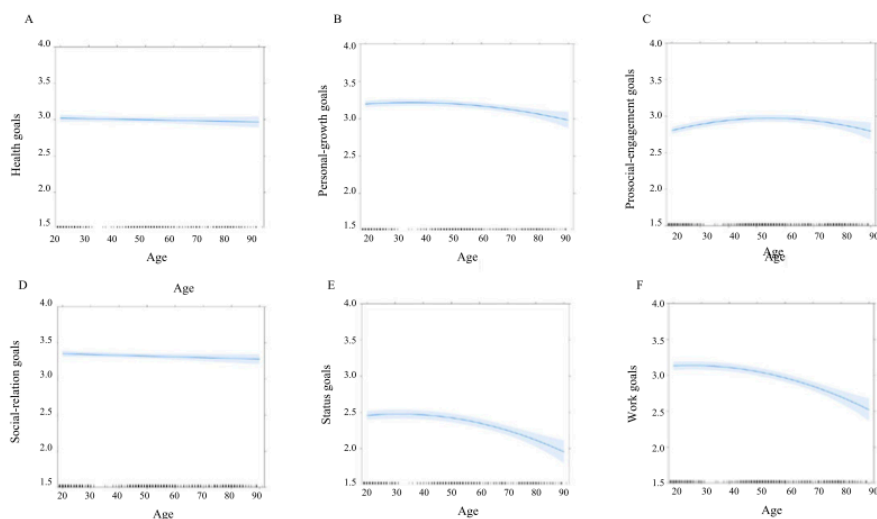


Figure 2. Effects of age on goal attainability in six life-goal domains. Areas in light blue display the 95% confidence intervals. For Models A and D, linear effects fit the data sufficiently, while for Models B, C, E, and F, the combined model of linear and squared effects fit the data better. [Colour figure can be viewed at wileyonlinelibrary.com]

that this effect was more pronounced the younger participants were.

Second, age moderated the link between the importance of personal-growth goals and positive affect at Time 3 ($b = -0.007$, $p = .01$, 95% CI $[-0.011, -0.002]$; with a coefficient of the main effect of $b = 0.06$, refer to Table S8). We observed that among participants younger than 33.21 years, higher importance of personal-growth goals predicted higher positive affect; this effect was more pronounced the younger participants were. We also observed significant slopes among participants older than 85.29 years: Higher importance of personal-growth goals predicted lower positive affect; this effect was more pronounced the older participants were.

Third, age moderated the link between the importance of prosocial-engagement goals and positive affect at Time 3 ($b = -0.006$, $p = .005$, 95% CI $[-0.01, -0.002]$; with a coefficient of the main effect of $b = 0.10$, refer to Table S8). It was among participants younger than 44.08 years that higher importance of prosocial-engagement goals predicted higher positive affect and that this effect was more pronounced the younger participants were.

Fourth, age moderated the link between the attainability of personal-growth goals and positive affect at Time 3 ($b = 0.005$, $p = .03$, 95% CI $[0.001, 0.01]$; with a coefficient of the main effect of $b = 0.12$, refer to Table S8). We found that among participants older than 40.91 years, higher attainability of personal-growth goals predicted higher positive affect; this effect was more pronounced the older participants were.

Finally, age moderated the link between the attainability of social-relation goals and positive affect at Time 3 ($b = -0.005$, $p = .01$, 95% CI $[-0.01, -0.001]$; with a coefficient of the main effect of $b = 0.14$, refer to Table S8). It was among participants younger than 48.67 years that higher attainability of social-relation goals predicted higher positive

affect and that this effect was more pronounced the younger participants were.

Negative affect

As shown in the third section of Table 4, negative affect at Time 2 was positively predicted by earlier importance of personal-growth goals and prosocial-engagement goals and negatively predicted by earlier attainability of health, personal-growth, prosocial-engagement, and social-relation goals. For negative affect at Time 3, goal importance was not predictive, but attainability of personal-growth goals ($b = -0.09$, $p = .03$, 95% CI $[-0.18, -0.01]$) yielded a significant negative effect (Table 8).

Age moderations. We observed one significant age moderation for the association between earlier goal importance/goal attainability and later negative affect: Age moderated the link between the importance of status goals and negative affect at Time 3 ($b = -0.004$, $p = .02$, 95% CI $[-0.007, -0.001]$; with a coefficient of the main effect of $b = -0.05$, refer to Table S8). We observed that among participants older than 62.70 years, higher importance of status goals predicted lower negative affect; this effect was more pronounced the older participants were.

Satisfaction with occupational domain

Tables 5 and 6 display the predictive effects of goal importance and goal attainability on domain-specific satisfaction at Time 2. For the occupational domain at Time 2 (Table 5), work satisfaction was not predicted by goal importance in any goal domain, but work satisfaction was positively predicted by earlier attainability of personal-growth and work goals. Educational satisfaction was also not predicted by goal importance, but it was positively predicted by attainability of status goals. For satisfaction with the occupational domain at

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Table 3. Multilevel regression analyses predicting goal importance and goal attainability at Time 2 (T2) from goal importance and goal attainability at Time 1 (T1)

Life-goal domain	Stability effects						Attainability ↔ Importance					
	Importance T1 → Importance T2			Attainability T1 → Attainability T2			Attainability T1 → Importance T2			Importance T1 → Attainability T2		
	<i>b</i>	<i>SE</i>	95% CI	<i>p</i>	<i>b</i>	<i>SE</i>	95% CI	<i>p</i>	<i>b</i>	<i>SE</i>	95% CI	<i>p</i>
Health	0.58	0.03	[0.52, 0.64]	<.001	0.66	0.03	[0.59, 0.72]	<.001	0.10	0.03	[0.04, 0.15]	<.001
Personal growth	0.61	0.03	[0.54, 0.68]	<.001	0.52	0.04	[0.45, 0.59]	<.001	0.11	0.04	[0.04, 0.18]	.002
Prosocial engagement	0.70	0.03	[0.65, 0.77]	<.001	0.55	0.03	[0.48, 0.62]	<.001	-.01	0.04	[-0.08, 0.07]	.92
Social relations	0.75	0.04	[0.67, 0.82]	<.001	0.70	0.03	[0.64, 0.76]	<.001	0.08	0.03	[0.02, 0.15]	.01
Status	0.73	0.03	[0.68, 0.79]	<.001	0.48	0.04	[0.40, 0.55]	<.001	0.02	0.02	[-0.03, 0.05]	.41
Work	0.55	0.05	[0.46, 0.63]	<.001	0.57	0.04	[0.49, 0.66]	<.001	0.08	0.05	[-0.01, 0.18]	.10

Note: *N* = 637. CI, confidence interval. Significant results (*p* < .05) are presented in bold. In each model, predictors were goal importance and/or goal attainability, age, and interaction effects with age. In predicting later goal importance or goal attainability, we controlled for the stability of the respective outcome measure. For stability effects of goal importance, explained variance associated with fixed effects was $R^2_{\text{health}} = .34$, $R^2_{\text{personal growth}} = .36$, $R^2_{\text{prosocial engagement}} = .48$, $R^2_{\text{social relations}} = .44$, $R^2_{\text{status}} = .59$, and $R^2_{\text{work}} = .33$. For stability effects of goal attainability, explained variance associated with fixed effects was $R^2_{\text{health}} = .28$, $R^2_{\text{personal growth}} = .36$, $R^2_{\text{prosocial engagement}} = .32$, $R^2_{\text{social relations}} = .48$, $R^2_{\text{status}} = .23$, and $R^2_{\text{work}} = .29$. For the predictive effect of earlier goal importance on later goal importance, explained variance associated with fixed effects was $R^2_{\text{health}} = .36$, $R^2_{\text{personal growth}} = .37$, $R^2_{\text{prosocial engagement}} = .48$, $R^2_{\text{social relations}} = .45$, $R^2_{\text{status}} = .59$, and $R^2_{\text{work}} = .33$. For the predictive effect of earlier goal importance on later goal attainability, explained variance associated with fixed effects was $R^2_{\text{health}} = .43$, $R^2_{\text{personal growth}} = .29$, $R^2_{\text{prosocial engagement}} = .33$, $R^2_{\text{social relations}} = .48$, $R^2_{\text{status}} = .25$, and $R^2_{\text{work}} = .31$.

A closer look at life goals across adulthood

Table 4. Multilevel regression analyses predicting subjective well-being at Time 2 from goal importance and goal attainability at Time 1

Variable	Life satisfaction				Positive affect				Negative affect			
	<i>b</i>	<i>SE</i>	95% CI	<i>p</i>	<i>b</i>	<i>SE</i>	95% CI	<i>p</i>	<i>b</i>	<i>SE</i>	95% CI	<i>p</i>
Goal importance												
Health	-0.10	0.05	[-0.21, 0.01]	.06	0.01	0.05	[-0.09, 0.10]	.78	0.03	0.04	[-0.07, 0.12]	.57
Personal growth	-0.09	0.06	[-0.20, 0.03]	.12	-0.13	0.05	[-0.23, -0.03]	.01	0.15	0.05	[0.05, 0.25]	.001
Prosocial engagement	-0.09	0.05	[-0.20, 0.02]	.08	-0.07	0.05	[-0.15, 0.03]	.17	0.09	0.04	[0.01, 0.18]	.04
Social relations	-0.09	0.07	[-0.23, 0.05]	.21	-0.14	0.06	[-0.27, -0.01]	.03	0.10	0.06	[-0.01, 0.21]	.11
Status	0.02	0.04	[-0.06, 0.10]	.64	-0.03	0.04	[-0.11, 0.05]	.42	0.04	0.04	[-0.03, 0.11]	.28
Work	0.06	0.05	[-0.03, 0.15]	.24	0.01	0.04	[-0.06, 0.19]	.79	0.01	0.04	[-0.07, 0.10]	.78
Goal attainability												
Health	0.15	0.05	[0.07, 0.24]	.001	0.11	0.04	[0.03, 0.19]	.01	-0.11	0.04	[-0.19, -0.04]	.002
Personal growth	0.18	0.06	[0.05, 0.28]	.002	0.18	0.05	[0.07, 0.27]	<.001	-0.19	0.04	[-0.28, -0.10]	<.001
Prosocial engagement	0.12	0.06	[0.01, 0.23]	.04	0.14	0.05	[0.05, 0.24]	.01	-0.12	0.05	[-0.22, -0.03]	.01
Social relations	0.20	0.06	[0.07, 0.33]	<.001	0.20	0.05	[0.09, 0.31]	<.001	-0.16	0.05	[-0.25, -0.07]	<.001
Work	0.06	0.05	[-0.03, 0.15]	.20	0.16	0.04	[0.07, 0.24]	<.001	0.001	0.04	[-0.08, 0.08]	.97
Status	0.03	0.03	[-0.05, 0.09]	.41	0.08	0.03	[0.02, 0.14]	.01	-0.02	0.03	[-0.07, 0.04]	.53

Note: $N = 637$. CI, confidence interval. Significant results ($p < .05$) are presented in bold. In each model, predictors were goal importance, goal attainability, age, and interaction effects with age. Results are controlled for the stability of the outcome measure. For life satisfaction, explained variance associated with fixed effects was $R^2 = .51$ for each model. For positive affect, explained variance associated with fixed effects was $R^2 = .48$ for each model. For negative affect, explained variance associated with fixed effects was $R^2_{\text{Health}} = .44$, $R^2_{\text{Personal growth}} = .45$, $R^2_{\text{Prosocial engagement}} = .44$, $R^2_{\text{Social relations}} = .44$, $R^2_{\text{Status}} = .43$, and $R^2_{\text{Work}} = .43$.

Time 3, goal importance was again not predictive, but attainability of health goals ($b = 0.82$, $p < .001$, 95% CI [0.43, 1.24]) and attainability of personal-growth goals ($b = 0.60$, $p = .02$, 95% CI [0.04, 1.14]) were significant positive predictors of later work satisfaction (Table S9). Attainability of these two goal domains was also positively predictive of educational satisfaction at Time 3 (health goals: $b = 0.94$, $p = .002$, 95% CI [0.34, 1.53]; and personal-growth goals: $b = 0.80$, $p = .04$, 95% CI [0.05, 1.64]).

Age moderations. Testing moderating effects of age for the association between earlier goal importance/goal attainability and later occupational satisfaction (i.e. work satisfaction and educational satisfaction), we found no significant effect (all $ps > .05$).

Satisfaction with the health domain

For the health domain at Time 2 (Table 5), health satisfaction was negatively predicted by importance of personal-growth goals and positively predicted by attainability of health, personal-growth, and social-relation goals. For health satisfaction at Time 3, attainability of health goals remained a significant predictor ($b = 0.88$, $p < .001$, 95% CI [0.49, 1.25]), while the other effects were no longer significant (Table S9).

Age moderations. Two significant age moderations emerged for the association between earlier goal importance/goal attainability and later satisfaction in the health domain. First, age moderated the link between prosocial-engagement goal importance and health satisfaction at Time 2 ($b = 0.02$, $p = .02$, 95% CI [0.004, 0.04]). It was among participants older than 84.15 years that higher importance of prosocial-engagement goals predicted higher health satisfaction and that this effect was more pronounced the older participants were.

Second, age moderated the association between health-goal attainability and health satisfaction at Time 3 ($b = 0.02$, $p = .004$, 95% CI [0.008, 0.04]); with a coefficient of the main

effect of $b = 0.88$, refer to Table S9). We observed that among participants older than 27.52 years, higher attainability of health goals predicted higher health satisfaction; this effect was more pronounced the older participants were.

Satisfaction with social domain

For satisfaction with the social domain at Time 2 (Table 6), we found no main effects of goal importance on satisfaction in any social domain (i.e. satisfaction with family life, romantic relationship, and friendships), but we observed significant age moderations, signifying that goal importance predicted satisfaction with the social domain in specific age ranges (refer to the next section on age moderations for more details).

Goal attainability was predictive for satisfaction in all three social domains: First, for satisfaction with family life, attainability of social-relation goals was a significant positive predictor; second, for satisfaction with the romantic relationship, attainability of personal-growth goals and attainability of social-relation goals were positive significant predictors; third, for satisfaction with friendships, attainability of personal-growth goals and attainability of social-relation goals were positively predictive. It was also for the social domain at Time 3 that goal importance was not a strong predictor of later satisfaction (except for a positive link between importance of prosocial-engagement goals and relationship satisfaction; $b = 0.50$, $p = .02$, 95% CI [0.02, 0.94]). Goal attainability was no longer predictive of family and relationship satisfaction; but attainability of prosocial-engagement goals ($b = 0.40$, $p = .03$, 95% CI [0.07, 0.73]), attainability of social-relation goals ($b = 0.42$, $p = .03$, 95% CI [0.27, 0.78]), and attainability of work goals ($b = 0.34$, $p = .04$, 95% CI [0.02, 0.64]) were significant positive predictors of later friendship satisfaction (Table S10).

Age moderations. We observed several significant age moderations for the association between earlier goal importance/goal attainability and later satisfaction in the

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Table 5. Multilevel regression analyses predicting domain-specific satisfaction (work satisfaction, educational satisfaction, and health satisfaction) at Time 2 from goal importance and goal attainability at Time 1

Variable	Work satisfaction				Educational satisfaction				Health satisfaction			
	<i>b</i>	<i>SE</i>	95% CI	<i>p</i>	<i>b</i>	<i>SE</i>	95% CI	<i>p</i>	<i>b</i>	<i>SE</i>	95% CI	<i>p</i>
Goal importance												
Health	-0.10	0.34	[-0.80, 0.59]	.77	-0.01	0.28	[-0.54, 0.49]	.98	-0.11	0.21	[-0.50, 0.32]	.59
Personal growth	-0.68	0.38	[-1.43, 0.08]	.08	-0.32	0.31	[-0.94, 0.31]	.29	-0.46	0.23	[-0.93, -0.03]	.04
Prosocial engagement	-0.20	0.33	[-0.92, 0.51]	.54	-0.32	0.27	[-0.87, 0.24]	.25	-0.07	0.20	[-0.48, 0.30]	.72
Social relations	0.02	0.46	[-0.79, 1.03]	.96	0.20	0.38	[-0.55, 0.97]	.59	-0.24	0.27	[-0.75, 0.35]	.38
Status	0.17	0.28	[-0.46, 0.75]	.55	-0.34	0.24	[-0.78, 0.11]	.15	-0.02	0.17	[-0.40, 0.31]	.89
Work	-0.05	0.33	[-0.70, 0.50]	.87	-0.01	0.28	[-0.56, 0.55]	.97	0.05	0.19	[-0.31, 0.38]	.79
Goal attainability												
Health	0.46	0.29	[-0.17, 1.02]	.13	0.32	0.24	[-0.12, 0.79]	.19	0.49	0.18	[0.11, 0.81]	.01
Personal growth	0.87	0.35	[0.18, 1.59]	.01	0.26	0.28	[-0.26, 0.83]	.36	0.40	0.20	[0.01, 0.84]	.04
Prosocial engagement	0.46	0.36	[-0.27, 1.19]	.21	0.12	0.29	[-0.42, 0.73]	.69	0.35	0.35	[-0.11, 0.75]	.11
Social relations	0.32	0.38	[-0.44, 1.04]	.40	0.08	0.30	[-0.51, 0.72]	.78	0.59	0.21	[0.13, 1.05]	.01
Status	-0.01	0.20	[-0.43, 0.35]	.96	0.35	0.16	[0.01, 0.64]	.03	0.18	0.13	[-0.06, 0.42]	.16
Work	0.91	0.31	[0.24, 1.55]	.004	0.46	0.28	[-0.11, 0.96]	.08	0.21	0.18	[-0.19, 0.58]	.26

Note: $N_{work} = 294$; $N_{education} = 331$; $N_{health} = 624$. CI, confidence interval. Significant results ($p < .05$) are presented in bold. In each model, predictors were goal importance, goal attainability, age, and interaction effects with age. Results are controlled for the stability of the outcome measure. For work satisfaction, explained variance associated with fixed effects was $R^2_{health} = .21$, $R^2_{personal\ growth} = .22$, $R^2_{prosocial\ engagement} = .20$, $R^2_{social\ relations} = .21$, $R^2_{status} = .20$, and $R^2_{work} = .24$. For educational satisfaction, explained variance associated with fixed effects was $R^2_{health} = .15$, $R^2_{personal\ growth} = .15$, $R^2_{prosocial\ engagement} = .15$, $R^2_{social\ relations} = .16$, $R^2_{status} = .17$, and $R^2_{work} = .16$. For health satisfaction, explained variance associated with fixed effects was $R^2_{health} = .36$, $R^2_{personal\ growth} = .35$, $R^2_{prosocial\ engagement} = .36$, $R^2_{social\ relations} = .36$, $R^2_{status} = .35$, and $R^2_{work} = .36$.

social domain. First, for family satisfaction, age moderated the link between the attainability of personal-growth goals and family satisfaction at Time 2 ($b = 0.02$, $p = .02$, 95% CI [0.002, 0.03]). We found that among participants older than 46.66 years, higher attainability of personal-growth goals predicted higher family satisfaction and that this effect was more pronounced the older participants were. Age also moderated the link between work-goal attainability and family satisfaction at Time 3 ($b = -0.02$, $p = .04$, 95% CI [-0.03, -0.001]). The Johnson-Neyman analysis, however, indicated that slopes would be significant outside the participants' observed age range.

Second, for romantic relationship satisfaction, age moderated the link between the attainability of social-relation goals and relationship satisfaction at Time 2 ($b = 0.03$, $p = .03$, 95% CI [0.002, 0.05]). It was among participants older than 36.12 years that higher attainability of social-relation goals predicted higher relationship satisfaction and that this effect was more pronounced the older participants were. Age also moderated the link between work-goal attainability and relationship satisfaction at Time 2 ($b = 0.02$, $p = .04$, 95% CI [0.005, 0.04]). We found that among participants older than 42.18 years, higher attainability of work goals predicted higher relationship satisfaction and that this effect was more pronounced the older participants were. In addition, age moderated the link between health-goal attainability and relationship satisfaction at Time 3 ($b = -0.03$, $p = .01$, 95% CI [-0.04, -0.005]); with a coefficient of the main effect of $b = 0.09$, refer to Table S10). We observed that among participants younger than 38.44 years, higher attainability of health goals predicted higher relationship satisfaction and that this effect was more pronounced the younger participants were.

Finally, for friendship satisfaction, age moderated the link between earlier growth-goal attainability and friendship

satisfaction at Time 2 ($b = 0.02$, $p = .02$, 95% CI [0.003, 0.04]). It was among participants older than 36.60 years that higher attainability of personal-growth goals predicted higher friendship satisfaction and that this effect was more pronounced the older participants were. Furthermore, age moderated the link between prosocial-engagement goal attainability and friendship satisfaction at Time 2 ($b = 0.02$, $p = .03$, 95% CI [0.002, 0.03]). We observed that among participants older than 78.49 years, higher attainability of prosocial-engagement goals predicted higher friendship satisfaction; this effect was more pronounced the older participants were.⁶ Age also moderated the link between work-goal attainability and friendship satisfaction at Time 2 ($b = 0.02$, $p = .01$, 95% CI [0.005, 0.03]). We found that among participants older than 52.93 years, higher attainability of work goals predicted higher friendship satisfaction and that this effect was more pronounced the older participants were. Finally, age moderated the link between work-goal attainability and friendship satisfaction at Time 3 ($b = -0.02$, $p = .01$, 95% CI [-0.03, -0.005]); with a coefficient of the main effect of $b = 0.34$, refer to Table S10). We found that among participants younger than 44.14 years, higher attainability of work goals predicted higher friendship satisfaction; this effect was more pronounced the younger participants were.

Overall, the present results mainly support Hypothesis 3, revealing (i) a positive link between earlier intrinsic life goals—particularly their attainability—and later subjective well-

⁶Please note that one might think that the slope should be negative here (given the negative b provided in Table 6 for the association between attainability of prosocial-engagement goals and friendship satisfaction at Time 2; $b = -0.03$). However, when calculating the slope for the significant age range (i.e. for participants older than 78.49 years), we found the slope to be positive.

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Table 6. Multilevel regression analyses predicting domain-specific satisfaction (family satisfaction, romantic relationship satisfaction, and friendship satisfaction) at Time 2 from goal importance and goal attainability at Time 1

Variable	Family satisfaction			Romantic relationship satisfaction			Friendship satisfaction					
	<i>b</i>	<i>SE</i>	95% CI	<i>p</i>	<i>b</i>	<i>SE</i>	95% CI	<i>p</i>	<i>b</i>	<i>SE</i>	95% CI	<i>p</i>
Goal importance												
Health	-0.07	0.18	[-0.42, 0.28]	.69	0.13	0.23	[-0.28, 0.62]	.58	0.18	0.18	[-0.19, 0.57]	.32
Personal growth	-0.24	0.19	[-0.64, 0.14]	.20	-0.17	0.25	[-0.49, 0.28]	.49	-0.27	0.19	[-0.68, 0.11]	.16
Prosocial engagement	0.11	0.17	[-0.23, 0.44]	.50	0.13	0.23	[-0.32, 0.59]	.59	0.05	0.78	[-0.28, 0.39]	.17
Social relations	-0.06	0.23	[-0.40, 0.55]	.80	0.25	0.32	[-0.35, 0.85]	.44	0.07	0.24	[-0.38, 0.49]	.76
Status	-0.11	0.14	[-0.40, 0.18]	.45	-0.07	0.19	[-0.49, 0.32]	.73	-0.19	0.15	[-0.49, 0.10]	.20
Work	0.12	0.16	[-0.17, 0.45]	.46	-0.20	0.23	[-0.64, 0.25]	.39	-0.20	0.16	[-0.53, 0.15]	.22
Goal attainability												
Health	0.16	0.14	[-0.11, 0.45]	.25	0.17	0.20	[-0.21, 0.57]	.41	0.06	0.15	[-0.25, 0.34]	.66
Personal growth	0.27	0.17	[-0.09, 0.61]	.12	0.91	0.23	[-0.32, 0.23]	<.001	0.48	0.18	[0.08, 0.83]	.01
Prosocial engagement	0.21	0.21	[-0.15, 0.61]	.25	0.25	0.24	[-0.27, 0.71]	.29	-0.03	0.19	[-0.39, 0.34]	.86
Social relations	0.73	0.73	[0.37, 1.09]	<.001	0.81	0.28	[0.24, 1.35]	.004	0.49	0.19	[0.16, 0.84]	.01
Status	-0.02	0.11	[-0.23, 0.18]	.82	-0.04	0.15	[-0.33, 0.23]	.77	0.03	0.11	[-0.22, 0.24]	.79
Work	-0.02	0.16	[-0.32, 0.27]	.91	0.41	0.21	[-0.01, 0.82]	.06	0.09	0.16	[-0.21, 0.40]	.58

Note: $N_{\text{family}} = 615$; $N_{\text{romantic relationship}} = 418$; $N_{\text{friendship}} = 622$. CI, confidence interval. Significant results ($p < .05$) are presented in bold. In each model, predictors were goal importance, goal attainability, age, and interaction effects with age. Results are controlled for the stability of the outcome measure. For family satisfaction, explained variance associated with fixed effects was $R^2_{\text{health}} = .35$, $R^2_{\text{personal growth}} = .35$, $R^2_{\text{prosocial engagement}} = .35$, $R^2_{\text{social relations}} = .37$, $R^2_{\text{status}} = .34$, and $R^2_{\text{work}} = .34$. For relationship satisfaction, explained variance associated with fixed effects was $R^2_{\text{health}} = .31$, $R^2_{\text{personal growth}} = .35$, $R^2_{\text{prosocial engagement}} = .28$, $R^2_{\text{social relations}} = .31$, $R^2_{\text{status}} = .28$, and $R^2_{\text{work}} = .30$. For friendship satisfaction, explained variance associated with fixed effects was $R^2_{\text{health}} = .29$, $R^2_{\text{personal growth}} = .35$, $R^2_{\text{prosocial engagement}} = .28$, $R^2_{\text{social relations}} = .29$, $R^2_{\text{status}} = .28$, and $R^2_{\text{work}} = .28$.

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being; (ii) a thematic predictive validity for domain-specific satisfaction; and that (iii) moderations with age occurred mainly with regard to goal attainability, rather than goal importance. Overall, we found the following pattern for age moderations: When cut-offs for significant slopes were within the age group of young adults, we observed that slopes were more pronounced the younger participants were. When cut-offs for significant slopes were within the age group of older adults, conversely, we found this association to be more pronounced the older participants were. For cut-offs within the age group of middle-aged adults, we did not find a clear picture: While some associations were more pronounced the older participants were (e.g. the link between health-goal attainability and health satisfaction at Time 3); other associations were more pronounced the younger participants were (e.g. the link between social-relation goal attainability and positive affect at Time 3).

DISCUSSION

The purpose of the present study was to position life goals—as a motivational aspect of personality—in the context of adult development. We approached this aim through three complementary research avenues. First, we examined the content of what people across adulthood rate as important and perceive as attainable. Second, we analysed the reciprocal dynamics between goal importance and goal attainability over 2 years. Third, we studied the predictive power of goal importance and goal attainability on later subjective well-being (i.e. life satisfaction, positive affect, negative affect, and domain-specific satisfaction). Briefly, we found that (i) life goals mapped fairly well onto developmental tasks encountered in the respective life stage; (ii) goal importance and goal attainability were reciprocally linked to each other across age with goal importance exhibiting a stronger and more robust effect on goal attainability than vice versa; (iii) goal attainability, compared with goal importance, had a more pronounced effect on later subjective well-being, which was a largely age-independent effect⁷; and (iv) associations between life goals and domain-specific satisfaction reflected thematic links: Satisfaction was higher in the domains in which individuals thought that they could achieve their goals.

Content of goals: Age differences in goal importance and goal attainability

Baltes (1987) differentiated between three factors that may have an influence on goal content: Nonnormative factors, normative history-graded factors, and normative age-graded factors. Focusing on the latter of these aspects, and in line with Hypothesis 1a, the present findings revealed that age predicted which goals people rate as important: With higher

age, participants rated goals of personal growth, status, and work as less important, while they rated goals of health and prosocial engagement as more important. Participants also rated social-relation goals as less important with higher age, which was not in line with our hypothesis and will be discussed later. With regard to goal attainability and in line with Hypothesis 1b, participants perceived goals of personal growth, status, and work as less attainable later in life, while they valued goals of prosocial engagement as more attainable. No significant effects were found for the predicted effects on health-goal attainability, and no effects were found for the attainability of social-relation goals, indicating that people of all ages perceived their health goals and their social-relation goals as equally attainable.

Our findings correspond to the findings of Nurmi's (1992) study of three age groups that was conducted 25 years ago in Finland: Goals reflect what is possible and normative for people of different ages given their physical, cognitive, and social resources. Goals also reflect what is desirable for people of different ages, underscoring the role of age-related norms that make certain life tasks salient. Hence, the present results underline the integral part that age plays in the life goals that people value as important and perceive as attainable, situating the present findings in the context of developmental-task theory and supporting the concept of the postulated social-biological, age-based tasks (Hutteman et al., 2014). Our findings also highlight the concept of a *social clock* (Heckhausen, 1999; Neugarten, 1972), which means that norms and demands provide a temporal and contextual setting on which to orient one's goal pursuit in each life stage (Freund & Baltes, 2005). Overall, we maintain that the development over the adult lifespan is not a passive process but an active and dynamic interaction between the person and the norms, constraints, and tasks imposed by an age-graded environment (Baltes, Lindenberger, & Staudinger, 1998).

Prosocial-engagement, health, and social-relation goals across adulthood

While the findings for the domains of personal-growth, work, and status goals align with our predictions, the results for the domains of prosocial-engagement, health, and social-relation goals need some further discussion.

First, for the domain of prosocial engagement, the results showed differential age effects for goal importance and goal attainability, which was against our prediction: For the importance of prosocial-engagement goals, we found linear age effects, indicating that prosocial-engagement goals were rated as more important with higher age. In other words, prosocial-engagement goals represent an important psychological life theme, which enters the repertoire of people's motivational strivings and remains present into late adulthood, a finding that corresponds to previous findings on the role of generativity in older age (McAdams, St, Aubin, & Logan, 1993). For the attainability of prosocial-engagement goals, however, we found a combination of linear and squared effects to most accurately fit the data. That is, the attainability of prosocial-engagement goals increases

⁷Age moderations emerged in approximately 8% of the cases: For Hypothesis 2, we tested 24 moderation effects and found two effects to be significant (8.33%). For Hypothesis 3, we tested 216 moderation effects and found 19 effects to be significant (8.79%).

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throughout young adulthood, peaks in middle adulthood, and declines toward late adulthood.

Reasons for why middle-aged people are considered to be at the peak of their subjectively perceived influence on society (Erikson, 1968; Havighurst, 1972) may be manifold. It is reasonable to assume that although older people rate prosocial-engagement goals as important and tend to aspire to reach such goals, they perceive limited resources for achieving these goals. Experiencing a discrepancy between goal importance and goal attainability will likely lead to coping mechanisms (Brandtstädter & Rothermund, 2002). Hence, in the course of late adulthood, individuals disengage from the active roles that they have occupied, such as worker or parent of young children (Gall, Evans, & Howard, 1997), and start to find new roles, such as grandparent or responsible civil community member (Nimrod & Shrira, 2016). Although these roles might contribute to nourishing older adults' strivings for prosocial engagement, older adults might feel their likelihood of attaining their prosocial-engagement goals is limited, which might explain the lower attainability of prosocial-engagement goals in late adulthood. Middle-aged adults, in contrast, might have more resources and possibilities to fulfil their prosocial-engagement goals, in their community (e.g. through doing volunteer work), in their family (e.g. through passing traditions on to their young children), or, particularly, in their work environment (e.g. through being a role model for the upcoming generation). On the basis of the present results, we thus conclude that prosocial engagement is a topic of increasing importance throughout adulthood but that middle-aged adults are most likely to perceive their prosocial-engagement goals as attainable.

Second, it was in the life-goal domain of health that age was positively linked to goal importance, whereas age was not related to goal attainability. Within late adulthood, adults are usually confronted with decreasing physical and mental health and have to deal with the necessary adjustment to these limitations (for an overview, see Kaiser, 2009). It is in line with this reasoning that health goals were rated as more important with higher age, assuming that with having explicit health goals, older adults seek to maintain and/or improve their functional capacities for as long as possible (Ebner et al., 2006). Perceived attainability of health goals, however, was unrelated to age. Although this finding is contrary to Hypothesis 1b, in which we expected positive age effects on health-goal attainability, the finding also implies that adults of all ages perceive their health goals as equally attainable, a finding that highlights a potential protective factor for late adulthood and may complement theories of successful aging and sources of resilience in later life (Ryff, 1995; Ryff, Singer, Love, & Essex, 1998; Schulz & Heckhausen, 1996; Staudinger, Marsiske, & Baltes, 1995). More specifically, it is reasonable to assume that older adults who rate their health goals as important might adjust their concrete behaviour or life circumstances if their resources are still high (i.e. assimilative mode) or they may rescale their aspirations and their concrete health-goal content (i.e. accommodation mode) to align their goal importance and goal attainability (Brandtstädter & Rothermund, 2002). Both mechanisms

would be illustrative of adaptive processes for coping with the discrepancy between goal importance and goal attainability. The concrete mechanisms underlying this finding remain to be explored in future studies (such as shown for the protective effects of health engagement control strategies among older individuals; Wrosch, Schulz, & Heckhausen, 2002).

The third finding that did not align with our hypotheses refers to the importance of social-relation goals. Contrary to our argument that social-relation goals reflect an innate need and should therefore be valued as equally important across the adult lifespan, our results showed that social-relation goals were less important with higher age. Although this finding does not correspond to self-determination theory, which argues for relatedness being an equally important need across the adult lifespan (Deci & Ryan, 2000), it does parallel developmental-task theory (Havighurst, 1972), which posits that social-relation goals reflect strivings of major importance for young adults. This aspect is further supported by a meta-analysis on age-related changes in social networks (Wrzus et al., 2013), showing that it is throughout adulthood that the social network, reflecting all social relationships of a person, decreases. Similarly, recent findings (Wrzus, Wagner, & Riediger, 2016) have shown that young adults, compared with middle-aged adults, are more often surrounded by family and friends. However, findings from this meta-analysis have also demonstrated that social networks need to be understood from a differentiated perspective (Wrzus et al., 2013): Whereas some social networks decrease with age (mostly friendship networks), family networks and relationships with a few close others are not affected by age. It remains to be seen what underlying factors drive the steady decrease of some social networks across the adult lifespan and what factors are responsible for the stability of other social networks. With corroborating findings from the present study, it is reasonable to assume that lower strivings for social relations might constitute one such underlying factor. Future studies investigating the potentially mediating role of social-relation strivings in the link between age and size of social networks are needed to test this assumption. To acknowledge the differentiated role that social relationships might play across the adult lifespan, such research would benefit from decomposing the overall social-relation domain into more specific social-relation goals (such as relationships with acquaintances, friends, family members, and close others).

Aside from a decreasing social network, one could also argue that reasons for the lower importance of social-relation goals might be found in the different goal orientations that people of different age groups adhere to (Ebner et al., 2006): Whereas young adults are inclined to pursue goals with a growth orientation, middle-aged and older adults are more prone to pursue their goals with a focus on maintenance and loss prevention. Applied to the present findings, one could argue that older adults value the relationships they have but are not likely to assign high importance scores to goals of the social domain. This is the case because, by their very definition, goals are salient if change is sought to motivate behaviour, as in the case of social-relation goals through expanding the social network, finding a new partner, or

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seeking a new social environment. Consequently, if change in a particular life-goal domain is not sought, goals of this domain might be less salient. Hence, one cannot conclude from the present findings that the social-relation domain is no longer important for older adults. It might instead be the case that older adults maintain and value their social status quo, and our participants may not have reported goals that would imply effort or investment in changing their current social situation. Thus, rather than inferring that social-relation goals are no longer meaningful with higher age, it is much more reasonable to assume that adults from middle and late adulthood are already socially embedded and have existing relationships: Their social relations are an integral part of their life but do not require striving toward. Yet it needs to be stressed that given the family design of this study, our older participants were embedded in a family setting. The findings might emerge differently if a wider and more diverse range of older adults is considered, such as older adults without a family or a partner, who might be more likely to strive for social relations. In addition, one needs to consider that we gave participants predetermined goal domains; their goal importance might have been different if they had been free to describe and rank their goals.

We also investigated goal attainability in the social-relation domain. Our findings revealed that although social-relation goals were rated as less important with age, age was not related to attainability of social-relation goals. It is beyond the scope of the present study to explain why social-relation goals were perceived as equally attainable across age groups, but it is possible that age was not the driving force for the perceived likelihood of reaching social-relation goals. Rather than age-graded norms and demands, it is reasonable to intuit that internal factors might be relevant for whether a person perceives social-relation goals as attainable, such as a person's internal working model (e.g. attachment), which remains relatively stable across age (Freund & Nikitin, 2012; Mikulincer & Shaver, 2007). Similarly, more dispositional personality aspects, such as personality traits, might play an important role. For instance, personality traits have been shown to relate to the quality of social relationships (e.g. Asendorpf & Wilpers, 1998), to the initial level and changes in social well-being (e.g. Hill, Turiano, Mroczek, & Roberts, 2012), to relationship satisfaction (e.g. Dyrenforth, Kashy, Donnellan, & Lucas, 2010; Weidmann, Ledermann, & Grob, 2016), or to friendship development (e.g. K. Harris & Vazire, 2016). It is, thus, reasonable to assume that rather than age, more internal factors (such as personality traits or attachment styles) play a significant role in whether people feel their social-relation goals are attainable. Future studies are needed to disentangle the interplay between age, various internal factors, and social-relation goals in more detail.

Goal dynamics: Association between goal importance and goal attainability over time

Both goal importance and goal attainability showed 2-year stabilities of moderate size that are comparable or slightly higher than previously reported in longitudinal studies

(Lüdtke, Trautwein, & Husemann, 2009; Roberts, O'Donnell, & Robins, 2004). But goal importance and goal attainability are also dynamic constructs that adapt over time and alter along with changing life circumstances and key developmental tasks (Freund & Ebner, 2005). It has been suggested that one's goal pursuit needs to be stable to be attainable but flexible at the same time to adjust to new circumstances (Brandtstädter & Rothermund, 2002), which is referred to as the stability–flexibility dilemma (e.g. Bak & Brandtstädter, 1998). Given the present findings, we conclude that both the stability component and the flexibility component were present. More specially, we found a positive link between earlier goal importance and later goal attainability in all six life-goal domains, even when controlling for the stability of goal attainability. In other words, people who rate their goals as important and are motivated to accomplish these goals perceive these goals as more attainable (Koo & Fishbach, 2008).

However, the inverse link of goal attainability on later goal importance was less consistent across life-goal domains. Goal attainability was predictive of importance of health, personal-growth, and social-relation goals but not of prosocial-engagement, status, and work goals. It is possible that goal attainability might not have been the leading mechanism for later goal importance in these domains for two reasons: First, in the case of work goals, work importance is emphasized by society during major parts of the lifespan, which makes work an important and socially desirable endeavour for most people. Thus, work goals need, in some sense, to be important irrespective of whether these goals are perceived as attainable. Second, in the case of prosocial-engagement and status goals, these life-goal domains might also reflect the personality of the individual who pursues them rather than the goals' attainability. The perceived importance of these goals might therefore be fuelled less by their attainability than by their pursuer's ideals and values, that is, by other aspects of that individual's personality. Future research is needed to shed light on these preliminary explanations for why goal attainability was not consistently predictive of later goal importance, above and beyond previous goal importance.

In summary, we maintain that goal importance and goal attainability are fairly stable across time and share a longitudinal association, which is bidirectional for most goal domains. Except for a moderating age effect in the status-goal domain, we found no moderating effect on the association of age, which leads us to assume similar goal dynamics for people across adulthood. The bidirectionality might help people exhibit high control over their development and supports the dual-process framework of an assimilative mode and accommodative mode (e.g. Brandtstädter & Rothermund, 2002; Brandtstädter, Wentura, & Rothermund, 1999): If people rate a certain life goal as important, they invest more in this goal, which makes the goal more likely to be perceived as attainable. In contrast, if a goal appears less attainable, people devalue the importance of this life goal. We thus maintain that goal dynamics help people adjust goals to personal and contextual resources and that this dynamic is largely age independent.

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Goal outcomes: Goal importance and goal attainability as predictors of subjective well-being

Life goals guide and motivate a person's behaviour, which is likely to relate to that person's well-being (Deci & Ryan, 2000). In the present study, we tested the predictive effects of goal importance and goal attainability on cognitive-evaluative (i.e. life satisfaction and domain-specific satisfaction) and on affective components of subjective well-being (i.e. positive and negative affect). We tested these effects for both 2-year and 4-year intervals.

Effects of life goals on life satisfaction

We found no main associations between goal importance and later life satisfaction. This finding speaks against Hypothesis 3a, which predicted positive associations between goal importance and life satisfaction for intrinsic life-goal domains and negative associations between goal importance and life satisfaction for extrinsic life-goal domains. Rather than goal importance, it was goal attainability that predicted later life satisfaction: Goal attainability was a significant predictor of life satisfaction after 2 years in the health, personal-growth, prosocial-engagement, and social-relation domains and a significant predictor after 4 years in the personal-growth and social-relation domains. In contrast to the nonsignificant goal domains of work and status, these goal domains are likely to be intrinsic in nature and to fulfil innate needs (Deci & Ryan, 1985, 2000). This is particularly true for the two goal domains that showed predictive validity after 4 years, with personal-growth goals referring to the need for competence and autonomy and social-relation goals referring to the need for relatedness (Deci & Ryan, 1985, 2000). It is also in line with recent findings on the effect of active social pursuits on later well-being (Rohrer, Richter, Brümmer, Wagner, & Schmukle, 2018) that social relationships matter for people's evaluation of their lives. We, thus, maintain that it is the attainability of intrinsic life-goal domains (rather than the importance of intrinsic life-goal domains) that is conducive to later life satisfaction and that these benefits hold across adulthood, as the effects were largely independent of age.

Effects of life goals on positive and negative affect

It was also for the affective components of well-being (i.e. positive and negative affect) that links with goal attainability, rather than links with goal importance, were present. For *positive affect*, goal attainability in all life-goal domains was a significant positive predictor after 2 years, but only attainability of personal-growth and social-relation goals was predictive after 4 years. For *negative affect*, attainability was a significant negative predictor after 2 years in the health, personal-growth, prosocial-engagement, and social-relation domains, and attainability of personal-growth goals was a significant predictor after 4 years. Again, the goal domains of personal growth and social relations map onto fulfilling innate needs (Deci & Ryan, 1985, 2000). Thus, similar to the findings on the cognitive-evaluative component of well-being, goal attainability of intrinsic life goals was a consistent predictor for affect, particularly for the 4-year prediction.

These findings suggest that intrinsic aspects of the personal-development and social domain are important not only for the cognitive evaluation of one's life but also for the emotional realm.

It was for life satisfaction and positive affect that perceiving intrinsic life goals as attainable had an effect over 2 and 4 years. For negative affect, conversely, attainability of personal-growth goals had relevance after 2 years but not after 4 years, indicating some temporary character in this goal-affect link. Reasons for this might be found in results of twin studies, which suggest that negative affect tends to be relatively heritable, while positive affect does not show a significant heritable component but rather a shared environmental influence (Zheng, Plomin, & von Stumm, 2016). Accordingly, developmental tasks and their corresponding life goals might have a long-lasting impact on positive affect but less on negative affect. Following this logic, for negative affect, people would sooner return to their set point (for research on set point theory, see, for example, Brickman, Coates, & Janoff-Bulman, 1978; Fujita & Diener, 2005), which lessens the long-term effect of life goals on negative affect.

To summarize, the present findings partially support our hypotheses (Hypotheses 3a and 3b), indicating that the attainability of intrinsic goals was positively linked to later well-being. Goal attainability might be conducive for subjective well-being given that it reflects a person's feeling of control and perceived sphere of influence (Rotter, 1966). It has been argued that people are more satisfied if they feel they have this internal locus of control (Rotter, 1966), and that a greater feeling of goal attainability might yield more opportunities for goal achievement (Brunstein, 1993). Put differently, if people have no perceived control over the attainability of their goals, they might likely be dissatisfied. This is also in line with theories of learned helplessness, positing that the perceived loss of control over important goals is detrimental to well-being and a risk factor for depression (e.g. Abramson, Metalsky, & Alloy, 1989; Seligman, 1975). Following the postulates of the dual-process framework (Brandstädter & Rothermund, 2002), it is reasonable to assume that people who feel their goals are not attainable might have experienced difficulties in switching from the assimilative to the accommodative mode when they realized a discrepancy between goal importance and goal attainability. Consequently, one could argue that low well-being is likely to be experienced if difficulties in this switching process have occurred and the ascribed importance to blocked goals persists.

Effects of life goals on domain-specific satisfaction

In a test of our final hypothesis (Hypothesis 3c), we investigated the thematic associations between life goals and domain-specific satisfaction. For the first domain-specific satisfaction category—*occupational satisfaction*—it was again goal attainability rather than goal importance that was predictive. Most consistently, attainability of health and personal-growth goals showed a positive link to work and education satisfaction after 4 years. Work goals, as we hypothesized, were highly relevant for work satisfaction after 2 years but lost their predictive validity after 4 years. This

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finding illustrates that work goals tend to be meaningful and important, but they do not foster a person's satisfaction over a longer period. The same applies to the attainability of status goals, which was predictive of education satisfaction after 2 years but not for a longer period of time. As argued by Niemiec, Ryan, and Deci (2009), extrinsic goals (which would include status goals) might be satisfying because they imply certain positive consequences of the activity rather than satisfaction with the activity itself. Applied to the present case, perceiving status goals as attainable might be related to higher engagement and commitment to the educational path, eventually expecting a successful career, which is linked to more progress and to higher satisfaction with one's education. The downside of this pursuit, however, might come after time, when extrinsic goals alone are no longer motivating and fail to nourish basic needs.

Goals that consistently predicted satisfaction after 2 and 4 years in the occupational domain were health and personal-growth goals. At first glance, these goals seem not to have much in common or to be obviously relevant for occupational satisfaction. Yet perceiving personal-growth goals as attainable might nurture innate needs of autonomy and competence, which likely nourishes satisfaction. Health goals, on the other hand, might more frequently be pursued by people who are high in conscientiousness, a trait that, in turn, has been shown to relate to success and satisfaction in the occupational domain (e.g. Ozer & Benet-Martinez, 2006).

For the second domain-specific category, *health satisfaction*, importance of personal-growth goals was negatively predictive, while attainability was positively predictive for health, personal-growth, and social-relation goals across 2 years. Attainability of health goals was the only goal domain that remained a significant predictor across 4 years. People who perceive their health goals as attainable might allocate more time and effort to their health, eventually leading to higher satisfaction with their health. These results—similar to findings in the social domain—suggest that content-specific goals are relevant for one's content-specific satisfaction.

For the third domain-specific category, *social satisfaction*, it was again goal attainability rather than goal importance that played a significant part in predicting later satisfaction: Attainability of personal-growth goals was a significant predictor for satisfaction after 2 years in two social areas (i.e. romantic relationships and friendships), and attainability of social-relation goals was a significant predictor for satisfaction after 2 years in all three social areas (i.e. family, romantic relationships, and friendships). Given that no other domains were relevant, these results speak to the importance of content specificity for satisfaction in the social domain. That is, people who perceive their personal development and, particularly, their social relations as attainable are more satisfied with their social life. This corresponds to research on romantic relationships and emphasizes that relational goals are likely to positively relate to close relationships (e.g. Reis, Collins, & Berscheid, 2000). Relationship processes, such as partner affirmation (Drigotas, Rusbult, Wieselquist, & Whitton, 1999) or fulfilment of relatedness

needs (Hadden, Smith, & Knee, 2014), illustrate day-to-day aspects that might account for this link. Moreover, if people feel they can develop who they are, they tend to be satisfied with their social relationships, which is in line with research from the close relationship literature (Drigotas et al., 1999). Yet when it comes to predictive effects after 4 years, attainability of social-relation and personal-growth goals remained a significant predictor for satisfaction with friendships but was not predictive of family satisfaction and relationship satisfaction. Future research is needed to address how these life goals differently apply to and relate to satisfaction with friendships after 4 years, compared with satisfaction with family life and romantic relationships.

Following the logic that age would moderate the effects in the domain and life stage during which the respective developmental tasks are most salient (e.g. health in older age), we expected age to moderate effects in the occupation and health domains but not in the social domain. (i) For the occupational domain, we observed no significant age moderations, indicating that the link between goal importance/goal attainability and occupational satisfaction was independent of age. (ii) For satisfaction with the health domain, the association between prosocial-engagement goal importance and health satisfaction at Time 2 as well as the association between health-goal attainability and health satisfaction at Time 3 was moderated by age. It was with higher age that rating prosocial-engagement goals as important and perceiving health goals as attainable were linked to later satisfaction with one's health. (iii) For the social domain, significant age moderations emerged, revealing two implications: First, the domain-specific link between goals and social satisfaction was—against our hypothesis—the one that was most dependent on age. Second, it was more the association with goal attainability than the association with goal importance that was moderated by age. These moderations need further investigation in future studies to test why the social domain seems to be the most age-dependent domain.

In sum, the present findings have shown that the attainability of personally important goals in one domain likely relates to the satisfaction with this domain. At the same time, the results seem to suggest that personally meaningful goals in one domain do not come at cost to another domain. For instance, people who value their work goals as important are not, as might have been supposed, less satisfied with their social relationships. Although these cross-domain effects were not in the scope of the present investigation, they reveal meaningful impetus for future studies. One could assume that (i) cross-domain costs rarely arise or (ii) costs occur only if the concrete goal pursuit is examined, such as time investment in goals or allocation of resources in attaining these goals. Future research is needed to more thoroughly investigate these within-domain benefits and potential cross-domain costs with regard to different indicators of goals (i.e. goal importance, goal attainability, and goal investment).

It also needs to be addressed in future studies why age had an (linear and/or squared) effect on mean-level differences of goal importance and goal attainability but only partly contributed to the association between goal importance and goal attainability on the one hand (Hypothesis 2)

and their predictions of later subjective well-being on the other (Hypothesis 3). From the present findings, it is, so far, to conclude that the content of goals is sensitive to age, while the dynamic interplay between goal importance and goal attainability as well as goals' predictive power on later life outcomes are less sensitive to age.

Strengths and limitations

One of the strengths of the present research is the sample covering major parts of the adult lifespan, which enabled us to test the concept of developmental tasks in a large age-heterogeneous sample. Second, our study spans multiple measurement points, providing us with an insight into the longitudinal interplay between goal importance, goal attainability, and subjective well-being. Third, most research investigating the links between goals and satisfaction in the social domain (e.g. relationship satisfaction) has focused on relationship-specific goals. We extended past research by including goals across important life domains as predictors of satisfaction in social and other domains. Fourth, as well as clustering life goals into extrinsic and intrinsic goal components, as has often been done when using the Aspiration Index (e.g. Kasser & Ryan, 1996), we factor analysed goals and grouped them into six thematic domains to obtain a more fine-grained picture of life goals and their predictive validity on outcomes.

Some limitations should be borne in mind when interpreting the results. First, even though our sample was large and age heterogeneous, it represents a convenience sample with rather cognitively fit older adults. In addition, people from different cultural, socio-economic, and educational backgrounds might evaluate life goals and their attainability differently.

Second, we exclusively refer to self-report measures. Future research would benefit from including multi-method approaches by gathering additional information, such as observational data, other-reports, objective major life events occurring in a given life stage, or experience sampling and combining these data with self-reports.

Third, owing to the model misfits mentioned in Footnote 2, it is a limitation of this study that analyses were conducted by making use of manifest variables rather than latent variables. Hence, future studies would benefit from (i) improving their measurement of the study's key variables, which (ii) would make it possible to create latent variables. This, in turn, would allow to apply an MSEM approach to account for measurement errors and to calculate cross-lagged models with multiple outcomes (e.g. life satisfaction at Time 2 and life satisfaction at Time 3 predicted by goal importance and goal attainability at Time 1).

Fourth, we assessed people's life goals in that we explicitly asked participants about the importance and attainability of various life-goal domains. In doing so, we might have limited participants' option to mention life-goal domains that were not captured by the pre-existing goal domains. Hence, age-related differences in goal domains are only applicable to the goal domains that we asked for, and age-related effects occurring in other domains might have been masked. In a

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similar vein, our framing of goals was on a more abstract (e.g. 'pursuing one's own occupational career') than concrete (e.g. 'becoming a successful medical doctor in the area of cardiology') phrasing level (Little, 1989). An abstract phrasing might leave more room for individual interpretation, which might imply different meanings for different people and hence suggest different implications for a person's concrete assimilation and accommodation mode (Brandstädter & Rothermund, 2002) as well as subjective well-being.

Fifth, we did not prompt participants to prioritize certain life goals in their evaluations. In everyday life, people might experience conflict between their life goals, such as between the work and family domains (Wiese & Freund, 2005). This conflict might be particularly prominent and relevant in the so-called *rush hour* of life (Bittman & Wajcman, 2000), which characterizes young adulthood as a life stage in which several life goals are pursued simultaneously. Future research might more closely look at the hierarchy of goals that a person holds and how this prioritization might change across the lifespan and is differently related to well-being.

Sixth, taking into account ontogenetic and historical contextualism, we cannot preclude that our findings would be better explained by cohort than age (e.g. Grob, Krings, & Bangerter, 2001; Staudinger & Bluck, 2001).

Finally, it was beyond the scope of the present study to answer questions pertaining to explanatory mechanisms: Why are goal importance and goal attainability reciprocally linked to each other and what mechanisms, for instance, translate social-relation goals into satisfaction with the social domain? Investigating such processes might further provide an understanding of how life goals are embedded in people's everyday life across adulthood.

Future steps

Limitations reveal impetus for future research. While our study included goal importance and goal attainability, it cannot speak to concrete goal progress, which would add to the characteristics of goal-appraisal dimensions (Brunstein et al., 1999). In this attempt, future studies might also employ a microfocus on goal processes. Studying daily or weekly life-goal processes could provide a deeper insight into the concrete implementation and progress of life goals in daily life.

A second approach worth studying is to include implicit goals and motives (e.g. Schultheiss, 2001) so as to thoroughly understand the role of motivational processes across adulthood and in the realms of different life domains. It could be argued that the pursuit of explicit goals that are not in alignment with implicit goals is unlikely to nourish well-being (Brunstein, Schultheiss, & Grässman, 1998).

A third point of further inquiry is to measure goal-relevant support that is provided by close others. It has been argued that these social resources stimulate the setting of life goals and assist with the achievement of these goals (e.g. Brunstein et al., 1996; Diener & Fujita, 1995; Fitzsimons, Finkel, & VanDellen, 2015). In particular, as close others might foster or hinder one's personal development across the lifespan (e.g. Bühler, Weidmann, Kumashiro, & Grob, 2018; Drigotas, 2002), future studies might include emotional and

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instrumental support that is provided by a person's social network for approaching a certain goal and might investigate how this support changes across the lifespan.

Fourth and finally, future research might benefit from asking participants in an open format for their life goals (for a similar approach, see Massey, Gebhardt, & Garnefski, 2009). For instance, within the domain of work, results might vary depending on whether, for instance, work goals refer to 'getting promoted' compared with 'working less'. Future research might investigate how these open-format goals are related to age and promote later satisfaction within a given domain.

Conclusion

As Allport (1955) put it, mature striving is linked to long-range goals. With the aim of positioning life goals in the context of adult development, we applied a developmental perspective to goal content, the dynamics of goal importance and goal attainability, and goal outcomes. Given the results, we conclude that age matters for life goals in the following ways: First, people rate those life goals as important and attainable that correspond to the developmental tasks of their current life stage. Second, goal-related regulatory dynamics (such as balancing goal importance and goal attainability) seem to support people in the pursuit of their personal life goals across the entirety of adulthood and, consequently, to actively shape personality development. Finally, major life goals—particularly their attainability—seem to be of long-term importance for cognitive and affective components of well-being and show thematic predictive validity for domain-specific satisfaction across the adult lifespan.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

Table S1. Items for Assessing Goal Importance and Goal Attainability in Life-Goal Domains

Table S2. Standardized Factor Loadings Extracted From Exploratory Factor Analyses Across Life-Goal Domains for Goal Importance and Goal Attainability at Time 1 and Time 2

Table S3. Overview of Goodness-of-Fit Indices for Multilevel Structural Equation Analyses in Testing Hypotheses 2 and 3

Table S4. Measurement Invariance in Goal Importance Across Time 1 and Time 2

Table S5. Measurement Invariance in Goal Attainability Across Time 1 and Time 2

Table S6. Linear and Squared Effects of Age on Goal Importance and Goal Attainability at Time 2

Table S7. Means and Standard Deviations of Goal Importance and Goal Attainability at Time 2 and Subjective Well-Being at Time 2 and Time 3

Table S8. Multilevel Regression Analyses Predicting Subjective Well-Being at Time 3 From Goal Importance and Goal Attainability at Time 1

Table S9. Multilevel Regression Analyses Predicting Domain-Specific Satisfaction (Work Satisfaction, Educational Satisfaction, and Health Satisfaction) at Time 3 from Goal Importance and Goal Attainability at Time 1

Table S10. Multilevel Regression Analyses Predicting Domain-Specific Satisfaction (Family Satisfaction, Romantic Relationship Satisfaction, and Friendship Satisfaction) at Time 3 from Goal Importance and Goal Attainability at Time 1

Figure S1. Multilevel structural equation model of the dynamic association between goal importance and goal attainability (Hypothesis 2) exemplified for work goals. Abbreviations: gwoimp1T1 = work-goal importance at Time 1 (Item 1); gwoimp1T2 = work-goal importance at Time 2 (Item 1); gwoatt1T1 = work-goal attainability at Time 1 (Item 1); gwoatt1T2 = work-goal attainability at Time 2 (Item 1); rT1 = concurrent correlation between goal importance and goal attainability at Time 1; rT2 = concurrent correlation between goal-importance residual and goal-attainability residual at Time 2. $I \rightarrow I$ = stability effect of goal importance from Time 1 to Time 2; $A \rightarrow A$ = stability effect of goal attainability from Time 1 to Time 2; $I \rightarrow A$ = effect of goal importance at Time 1 on goal attainability at Time 2, controlling for the stability of goal attainability. $A \rightarrow I$ = effect of goal attainability at Time 1 on goal importance at Time 2, controlling for the stability of goal importance. Other abbreviations can be interpreted following the format of gwoimp1T1 and gwoatt1T1, where the first number refers to the item number and the second number refers to time. Level 2 represents the family level and Level 1 the individual level.

Figure S2. Multilevel structural equation model of the predictive effect of the association between goal importance and goal attainability at Time 1 on outcomes at Time 2 and Time 3 (Hypothesis 3) exemplified for the association between work goals and life satisfaction. Abbreviations: gwoimp1T1 = work-goal importance at Time 1 (Item 1); gwoatt1T1 = work-goal attainability at Time 1 (Item 1); swls1T2 = life satisfaction at Time 2 (Item 1); swls1T3 = life satisfaction at Time 3 (Item 1);

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$rT1$ = concurrent correlation between goal importance and goal attainability at Time 1. $I \rightarrow LST2$ = predictive effect of goal importance on life satisfaction at Time 2, controlling for the stability of life satisfaction (from Time 1 to Time 2); $A \rightarrow LST2$ = predictive effect of goal attainability on life satisfaction at Time 2, controlling for the stability of life satisfaction (from Time 1 to Time 2); $I \rightarrow LST3$ = predictive effect of goal importance on life satisfaction at Time 3, controlling for the stability of life satisfaction (from Time 1 to Time 3); $A \rightarrow LST3$ = predictive effect of goal attainability on life satisfaction at Time 3, controlling for the stability of life satisfaction (from Time 1 to Time 3); $LST2 \rightarrow LST3$ = stability effect of life satisfaction from Time 2 to Time 3. Other abbreviations can be interpreted following the format of $gwoimp1T1$ and $gwoatt1T1$, where the first number refers to the item number and the second number refers to time. Level 2 represents the family level and Level 1 the individual level.

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Supplemental Material

Table S1
Items for Assessing Goal Importance and Goal Attainability in Life-Goal Domains

Life-goal domain	Items
Community	<ol style="list-style-type: none"> 1. To assist people who need it, asking nothing in return. 3. To work to make the world a better place. 3. To help others improve their lives. 4. To help people in need.
Fame	<ol style="list-style-type: none"> 1. To be admired by many people. 2. To be famous. 3. To have my name appear frequently in the media. 4. To be admired by lots of different people.
Family	<ol style="list-style-type: none"> 1. To be a good mother/father. 2. To have an intact family life. 3. To care for my family. 4. To have a happy family.
Generativity	<ol style="list-style-type: none"> 1. To campaign for the protection of nature. 2. To serve as a role model for younger people. 3. To campaign for the general welfare. 4. To transfer knowledge to younger generations.
Health	<ol style="list-style-type: none"> 1. To be physically healthy. 2. To keep myself healthy and well. 3. To be relatively free from sickness. 4. To have a physically healthy lifestyle.
Image	<ol style="list-style-type: none"> 1. To have people comment often about how attractive I look. 2. To keep up with fashions in hair and clothing. 3. To achieve the "look" I've been after. 4. To have an image that others find appealing.

(continued)

Table S1 (continued)

Items for Assessing Goal Importance and Goal Attainability in Life-Goal Domains

Life-goal domain	Items
Personal growth	<ol style="list-style-type: none"> 1. To grow and learn new things. 2. At the end of my life, to be able to look back on my life as meaningful and complete. 3. To choose what I do, instead of being pushed along by life. 4. To gain increasing insight into why I do the things I do.
Relationships	<ol style="list-style-type: none"> 1. To have good friends that I can count on. 2. To share my life with someone I love. 3. To have committed, intimate relationships. 4. To have deep enduring relationships.
Wealth	<ol style="list-style-type: none"> 1. To have many expensive possessions. 2. To be financially successful. 3. To be rich. 4. To have enough money to buy everything I want.
Work	<ol style="list-style-type: none"> 1. To have a satisfying occupation. 2. To have job security. 3. To be successful in my job. 4. To pursue my own occupational career.

Note. Goal importance was measured with “How important is this to you?” and goal attainability was measured with “How likely is it that this will happen in your future?” Life-goal domains of community, health, fame, image, personal growth, relationships, and wealth are based on an adapted version of the Aspirations Index (Deci & Ryan, 1997; Kasser & Ryan, 1993) in its German translation (Klusmann, Trautwein, & Lüdtkke, 2005). The life-goal domains of family, generativity, and work were added.

Table S2

Standardized Factor Loadings Extracted From Exploratory Factor Analyses Across Life-Goal Domains for Goal Importance and Goal Attainability at Time 1 and Time 2

Life-goal domain	Factor loadings															
	Goal importance								Goal attainability							
	Time 1				Time 2				Time 1				Time 2			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Relationships			.51				.63				.51	.33			.68	
Family			.58				.67				.76				.59	
Community		.81				.81				.70				.55		.37
Generativity		.74				.77				.81				.86		.31
Wealth	.64				.69				.73			.31	.78			
Fame	.78				.76				.92				.89			
Image	.67				.62				.69				.71			
Personal growth		.30	.38							.31		.49				.72
Health			.58				.59				.30	.39				
Work				.94				.92	.33			.56	.37		.34	.45

Note. Loadings greater than .30 are presented and primary loadings (loadings greater than .50) are shown in bold. Factors were extracted through the maximum likelihood method with varimax rotation.

Table S3

Overview of Goodness-of-Fit Indices for Multilevel Structural Equation Analyses in Testing Hypotheses 2 and 3

Variable	Life-goal domain											
	Health		Personal growth		Prosocial engagement		Social relations		Status		Work	
	CFI	RMSEA	CFI	RMSEA	CFI	RMSEA	CFI	RMSEA	CFI	RMSEA	CFI	RMSEA
Hypothesis 2	0.760	0.123	0.680	0.111	0.642	0.110	0.568	0.123	0.615	0.102	0.808	0.123
Hypothesis 3												
Life satisfaction	0.859	0.082	0.841	0.083	0.792	0.085	0.568	0.091	0.745	0.087	0.869	0.082
Positive affect	0.750	0.082	0.745	0.081	0.729	0.079	0.704	0.081	0.708	0.077	0.764	0.080
Negative affect	0.719	0.081	0.696	0.082	0.700	0.078	0.673	0.080	0.689	0.076	0.733	0.082
Work satisfaction	0.863	0.109	0.763	0.126	0.704	0.122	0.645	0.126	0.725	0.109	0.777	0.143
Educational satisfaction	0.849	0.095	0.779	0.098	0.693	0.116	0.745	0.100	0.668	0.117	0.814	0.109
Health satisfaction	0.803	0.129	0.787	0.111	0.739	0.115	0.653	0.128	0.694	0.113	0.874	0.114
Family satisfaction	0.854	0.103	0.755	0.114	0.730	0.117	0.617	0.136	0.688	0.113	0.874	0.111
Relationship satisfaction	0.883	0.094	0.793	0.109	0.755	0.113	0.652	0.131	0.704	0.111	0.865	0.103
Friendship satisfaction	0.835	0.113	0.781	0.110	0.724	0.119	0.612	0.612	0.691	0.113	0.863	0.118

Note. Goodness-of-fit indices of various models were examined with the following fit indices: The comparative fit index (CFI) and the root mean square error of approximation (RMSEA). The model is said to fit the data well if the CFI is above .97 and the RMSEA is below .05. Acceptable fit is given when CFI is above .95 and RMSEA is below .08.

Table S4
Measurement Invariance in Goal Importance Across Time 1 and Time 2

Life-goal domain	Model	χ^2	CFI	RMSEA	Δdf	$\Delta\chi^2$	ΔCFI	$\Delta RMSEA$	p -value
Health	Configural invariance	113.09	.911	.186					
	Metric invariance	113.86	.911	.141	3	3.771	.000	.045	.287
	Scalar invariance	119.77	.911	.118	3	2.917	.000	.023	.405
Personal growth	Configural invariance	8.279	.988	.037					
	Metric invariance	11.003	.989	.027	3	2.724	.010	.010	.436
	Scalar invariance	13.592	.990	.021	3	2.589	.006	.006	.459
Pros. engagement	Configural invariance	512.30	.887	.124					
	Metric invariance	514.60	.888	.113	7	2.299	.001	.011	.941
	Scalar invariance	522.30	.888	.106	7	7.703	.001	.0307	.359
Social relations	Configural invariance	1104.0	.723	.186					
	Metric invariance	1118.1	.721	.172	7	14.010	.002	.014	.051
	Scalar invariance	1125.5	.721	.160	7	7.486	.000	.012	.380
Status	Configural invariance	2167.3	.713	.158					
	Metric invariance	2179.2	.713	.151	11	11.879	.000	.007	.371
	Scalar invariance	2190.7	.713	.144	11	11.491	.000	.007	.403
Work	Configural invariance	28.386	.986	.092					
	Metric invariance	34.962	.984	.074	3	6.576	.002	.018	.087
	Scalar invariance	36.384	.985	.060	3	1.421	.201	.014	.700

Note. Model parameters in bold are significant ($p < .05$). Life-goal domains were as follows: Health goals, personal-growth goals, prosocial-engagement goals (community and generativity goals), social-relations goals (family and relationship goals), status goals, and work goals. The confirmatory factor analysis of all life-goal domains consisted of their respective items. In all models, the first loading was set to be 1.

Table S5
 Measurement Invariance in Goal Attainability Across Time 1 and Time 2

Life-goal domain	Model	χ^2	CFI	RMSEA	Δdf	$\Delta\chi^2$	ΔCFI	$\Delta RMSEA$	p -value
Health	Configural invariance	82.848	.949	.160					
	Metric invariance	87.176	.948	.122	3	4.327	.001	.038	.228
	Scalar invariance	89.331	.949	.102	3	2.155	.001	.020	.541
Personal growth	Configural invariance	20.423	.968	.073					
	Metric invariance	21.416	.972	.052	3	0.993	.016	.019	.803
	Scalar invariance	24.674	.971	.044	3	3.257	.001	.008	.353
Pros. engagement	Configural invariance	195.79	.946	.072					
	Metric invariance	199.66	.947	.066	7	3.866	.001	.006	.795
	Scalar invariance	200.95	.949	.060	7	1.296	.002	.006	.988
Social relations	Configural invariance	1021.9	.751	.180					
	Metric invariance	1024.7	.752	.166	7	2.808	.001	.014	.902
	Scalar invariance	2034.5	.751	.155	7	9.825	.001	.011	.198
Status	Configural invariance	1541.3	.837	.135					
	Metric invariance	1563.1	.836	.129	11	21.790	.001	.006	.026
	Scalar invariance	1571.8	.836	.123	11	8.712	.000	.006	.648
Work	Configural invariance	36.468	.982	.107					
	Metric invariance	45.035	.979	.087	3	8.566	.003	.020	.035
	Scalar invariance	50.329	.977	.075	3	5.294	.002	.012	.151

Note. Model parameters in bold are significant ($p < .05$). Life-goal domains were as follows: Health goals, personal-growth goals, prosocial-engagement goals (community and generativity goals), social-relations goals (family and relationship goals), status goals, and work goals. The confirmatory factor analysis of all life-goal domains consisted of their respective items. In all models, the first loading was set to be 1. CFI = Comparative fit index; RMSEA = root mean square error of approximation.

Table S6
 Linear and Squared Effects of Age on Goal Importance and Goal Attainability at Time 2

Life-goal domain	Linear effects				Squared effects			
	<i>b</i>	<i>SE</i>	95% CI	<i>p</i>	<i>b</i>	<i>SE</i>	95% CI	<i>p</i>
Goal importance								
Health	.009	.007	[-0.004, 0.02]	.18	.006	.003	[-0.001, 0.01]	.12
Personal growth	-.04	.007	[-0.05, -0.02]	<.001	-.002	.004	[-0.009, 0.006]	.66
Prosocial engagement	.04	.008	[0.02, 0.06]	<.001	.002	.005	[-0.007, 0.01]	.63
Social relations	-.02	.001	[-0.004, -0.01]	.001	.002	.003	[-0.008, 0.006]	.62
Status	-.06	.008	[-0.08, -0.05]	<.001	.008	.004	[-0.001, 0.02]	.05
Work	-.01	.010	[-0.13, -0.08]	<.001	-.006	.006	[-0.02, 0.005]	.26
Goal attainability								
Health	-.02	.009	[-0.03, 0.002]	.06	-.0001	.005	[-0.001, 0.001]	.99
Personal growth	-.03	.008	[-0.04, -0.01]	.001	-.007	.004	[-0.02, 0.001]	.08
Prosocial engagement	.02	.008	[0.002, 0.04]	.04	-.01	.0004	[-0.02, -0.004]	.005
Social relations	.002	.008	[-0.02, 0.01]	.76	-.008	.004	[-0.02, -0.003]	.05
Status	-.04	.011	[-0.06, -0.02]	<.001	-.009	.006	[-0.02, 0.003]	.11
Work	-.05	.011	[-0.07, -0.02]	<.001	-.007	.006	[-0.02, 0.006]	.25

Note. *N* = 637. CI = Confidence interval. Significant results ($p < .05$) are presented in bold. Effects are reported for Time 2. Age is scaled in decades. For goal importance, testing Model 1 (only linear effects) against Model 2 (linear and squared effects) revealed that the linear model fit the data significantly better than Model 2 in all domains. For goal attainability, testing Model 1 (only linear effects) against Model 2 (linear and squared effects) revealed that Model 2 fit the data significantly better than Model 1 in the domain of prosocial engagement, $\chi^2(1, 634) = 7.84, p = .005$.

Table S7

Means and Standard Deviations of Goal Importance and Goal Attainability at Time 2 and Subjective Well-Being at Time 2 and Time 3

Variable	Time 2		Time 3	
	M	SD	M	SD
Goal importance				
Health	3.63	0.39		
Personal growth	3.48	0.41		
Prosocial engagement	3.09	0.49		
Social relations	3.69	0.38		
Status	1.99	0.47		
Work	3.22	0.63		
Goal attainability				
Health	2.98	0.51		
Personal growth	3.14	0.43		
Prosocial engagement	2.87	0.44		
Social relations	3.32	0.44		
Status	2.27	0.64		
Work	2.96	0.60		
Subjective well-being				
Life satisfaction	3.97	0.70	4.00	0.67
Positive affect	3.58	0.59	3.62	0.61
Negative affect	1.66	0.53	1.64	0.48
Work satisfaction	7.35	2.16	7.44	2.12
Educational satisfaction	7.55	1.97	7.24	2.23
Health satisfaction	7.39	2.31	7.14	2.37
Family satisfaction	7.95	1.93	7.98	1.86
Relationship satisfaction	8.31	1.95	8.41	1.72
Friendship satisfaction	7.98	1.90	7.92	1.80

Note. Goal importance and goal attainability were assessed on a 4-point Likert scale (from 1 to 4); life satisfaction, positive affect, and negative affect were assessed on a 5-point Likert scale (from 1 to 5); and domain-specific satisfaction was assessed on an 11-point Likert scale (from 0 to 10).

Table S8

Multilevel Regression Analyses Predicting Subjective Well-Being at Time 3 From Goal Importance and Goal Attainability at Time 1

Variable	Life satisfaction				Positive affect				Negative affect			
	<i>b</i>	<i>SE</i>	95 % CI	<i>p</i>	<i>b</i>	<i>SE</i>	95 % CI	<i>p</i>	<i>b</i>	<i>SE</i>	95 % CI	<i>p</i>
Goal importance												
Health	.02	.06	[-0.09, 0.14]	.73	.08	.06	[-0.03, 0.18]	.17	.05	.04	[-0.04, 0.15]	.29
Personal growth	-.12	.06	[-0.25, 0.01]	.05	.06	.06	[-0.06, 0.17]	.28	.07	.05	[-0.02, 0.16]	.13
Prosocial engagement	.08	.06	[-0.03, 0.19]	.18	.10	.05	[0.01, 0.21]	.03	.03	.04	[-0.06, 0.11]	.53
Social relations	-.02	.01	[-0.17, 0.14]	.78	.05	.07	[-0.10, 0.19]	.52	-.03	.06	[-0.16, 0.09]	.64
Status	.001	.05	[-0.09, 0.10]	.99	.08	.04	[-0.01, 0.16]	.07	-.02	.04	[-0.10, 0.04]	.53
Work	-.03	.05	[-0.14, 0.07]	.55	-.03	.05	[-0.13, 0.06]	.51	.02	.04	[-0.05, 0.11]	.62
Goal attainability												
Health	.09	.05	[-0.02, 0.18]	.07	.05	.04	[-0.04, 0.13]	.25	-.04	.04	[-0.12, 0.03]	.26
Personal growth	.24	.06	[0.12, 0.36]	<.001	.12	.06	[0.02, 0.23]	.03	-.09	.05	[-0.18, -0.01]	.03
Prosocial engagement	.03	.06	[-0.08, 0.15]	.62	.07	.06	[-0.03, 0.17]	.18	-.002	.05	[-0.09, 0.09]	.97
Social relations	.20	.07	[0.08, 0.31]	.001	.14	.06	[0.02, 0.24]	.01	-.02	.04	[-0.11, 0.07]	.65
Status	.02	.04	[-0.04, 0.95]	.53	.06	.03	[0.002, 0.12]	.07	-.05	.03	[-0.10, 0.01]	.09
Work	.10	.05	[-0.02, 0.20]	.07	.06	.05	[-0.04, 0.14]	.21	-.07	.04	[-0.15, 0.01]	.09

Note. $N = 574$. CI = Confidence interval. Significant results ($p < .05$) are presented in bold. In each model, predictors were goal importance, goal attainability, age, and interaction effects with age. Results are controlled for the stability of the outcome measure. For life satisfaction, explained variance associated with fixed effects was $R^2_{\text{health}} = .49$, $R^2_{\text{personal growth}} = .49$, $R^2_{\text{prosocial engagement}} = .50$, $R^2_{\text{social relations}} = .50$, $R^2_{\text{status}} = .43$, $R^2_{\text{work}} = .50$. For positive affect, explained variance associated with fixed effects was $R^2_{\text{health}} = .51$, $R^2_{\text{personal growth}} = .53$, $R^2_{\text{prosocial engagement}} = .53$, $R^2_{\text{social relations}} = .52$, $R^2_{\text{status}} = .52$, $R^2_{\text{work}} = .50$. For negative affect, explained variance associated with fixed effects was $R^2_{\text{health}} = .42$, $R^2_{\text{personal growth}} = .42$, $R^2_{\text{prosocial engagement}} = .42$, $R^2_{\text{social relations}} = .42$, $R^2_{\text{status}} = .43$, $R^2_{\text{work}} = .42$.

Table S9

Multilevel Regression Analyses Predicting Domain-Specific Satisfaction (Work Satisfaction, Educational Satisfaction, and Health Satisfaction) at Time 3 from Goal Importance and Goal Attainability at Time 1

Variable	Work satisfaction				Educational satisfaction				Health satisfaction			
	<i>b</i>	<i>SE</i>	95 % CI	<i>p</i>	<i>b</i>	<i>SE</i>	95 % CI	<i>p</i>	<i>b</i>	<i>SE</i>	95 % CI	<i>p</i>
Goal importance												
Health	-.34	.26	[-0.88, 0.14]	.19	-.16	.37	[-0.94, 0.55]	.66	-.28	.24	[-0.77, 0.24]	.25
Personal growth	-.52	.30	[-1.14, 0.04]	.09	.07	.48	[-0.77, 1.00]	.87	-.45	.26	[-0.92, 0.04]	.09
Prosocial engagement	.17	.25	[-0.32, 0.65]	.49	.05	.35	[-0.65, 0.72]	.88	.11	.24	[-0.32, 0.54]	.65
Social relations	-.21	.38	[-0.88, 0.58]	.58	.46	.58	[-0.64, 1.66]	.42	.24	.34	[-0.40, 0.94]	.49
Status	-.33	.22	[-0.78, 0.09]	.14	.19	.32	[-0.47, 0.79]	.56	.04	.20	[-0.32, 0.46]	.82
Work	-.19	.26	[-0.66, 0.34]	.46	.41	.36	[-0.32, 1.13]	.25	.18	.22	[-0.26, 0.61]	.43
Goal attainability												
Health	.82	.21	[0.43, 1.24]	<.001	.94	.30	[0.34, 1.53]	.002	.88	.19	[0.49, 1.25]	<.001
Personal growth	.60	.26	[0.04, 1.14]	.02	.80	.38	[0.05, 1.64]	.04	.36	.24	[-0.08, 0.85]	.13
Prosocial engagement	.02	.27	[-0.52, 0.55]	.95	.35	.38	[-0.37, 1.09]	.37	.12	.24	[0.36, 0.58]	.63
Social relations	.40	.28	[-0.16, 1.00]	.16	.25	.40	[-0.51, 1.07]	.53	-.09	.25	[-0.59, 0.41]	.73
Status	.29	.15	[-0.01, 0.63]	.05	.19	.23	[-0.24, 0.65]	.40	.003	.01	[-0.28, 0.32]	.98
Work	.41	.23	[-0.07, 0.86]	.09	.64	.33	[-0.08, 1.37]	.05	.25	.21	[-0.17, 0.68]	.23

Note. $N_{work} = 292$; $N_{education} = 219$; $N_{health} = 496$. CI = Confidence interval. Significant results ($p < .05$) are presented in bold. In each model, predictors were goal importance, goal attainability, age, and interaction effects with age. Results are controlled for the stability of the outcome measure. For work satisfaction, explained variance associated with fixed effects was $R^2_{health} = .43$, $R^2_{personal\ growth} = .40$, $R^2_{prosocial\ engagement} = .39$, $R^2_{social\ relations} = .40$, $R^2_{status} = .40$, $R^2_{work} = .41$. For educational satisfaction, explained variance associated with fixed effects was $R^2_{health} = .28$, $R^2_{personal\ growth} = .25$, $R^2_{prosocial\ engagement} = .23$, $R^2_{social\ relations} = .24$, $R^2_{status} = .23$, $R^2_{work} = .26$. For health satisfaction, explained variance associated with fixed effects was $R^2_{health} = .39$, $R^2_{personal\ growth} = .35$, $R^2_{prosocial\ engagement} = .35$, $R^2_{social\ relations} = .34$, $R^2_{status} = .34$, $R^2_{work} = .37$.

Table S10

Multilevel Regression Analyses Predicting Domain-Specific Satisfaction (Family Satisfaction, Romantic Relationship Satisfaction, and Friendship Satisfaction) at Time 3 from Goal Importance and Goal Attainability at Time 1

Variable	Family satisfaction				Romantic relationship satisfaction				Friendship satisfaction			
	<i>b</i>	<i>SE</i>	95 % CI	<i>p</i>	<i>b</i>	<i>SE</i>	95 % CI	<i>p</i>	<i>b</i>	<i>SE</i>	95 % CI	<i>p</i>
Goal importance												
Health	.06	.21	[-0.39, 0.51]	.76	-.10	.23	[-0.58, 0.34]	.66	.16	.18	[-0.19, 0.56]	.41
Personal growth	-.11	.21	[-0.54, 0.31]	.59	.03	.24	[-0.42, 0.34]	.90	-.04	.20	[-0.44, 0.34]	.83
Prosocial engagement	-.07	.19	[-0.45, 0.28]	.72	.50	.22	[0.02, 0.94]	.02	.25	.18	[-0.10, 0.60]	.16
Social relations	.16	.28	[-0.46, 0.75]	.58	.01	.34	[-0.64, 0.72]	.98	-.003	.27	[-0.57, 0.44]	.92
Status	-.11	.17	[-0.43, 0.23]	.49	-.05	.18	[-0.45, 0.31]	.77	.24	.15	[-0.06, 0.56]	.11
Work	-.22	.19	[-0.56, 0.13]	.24	-.33	.21	[-0.78, 0.07]	.13	-.13	.17	[-0.47, 0.19]	.44
Goal attainability												
Health	.09	.16	[-0.21, 0.41]	.59	.32	.19	[-0.04, 0.69]	.09	.28	.15	[-0.01, 0.58]	.06
Personal growth	.26	.19	[-0.15, 0.66]	.18	-.001	.23	[-0.33, 0.25]	.99	.27	.18	[-0.08, 0.66]	.13
Prosocial engagement	.27	.21	[-0.11, 0.68]	.19	-.13	.23	[-0.57, 0.35]	.59	.40	.19	[0.01, 0.73]	.03
Social relations	.34	.21	[-0.05, 0.77]	.11	.48	.26	[-0.08, 0.94]	.06	.42	.19	[0.27, 0.78]	.03
Status	-.006	.12	[-0.26, 0.23]	.96	-.03	.14	[-0.31, 0.29]	.84	.11	.12	[-0.12, 0.34]	.33
Work	.13	.18	[-0.24, 0.47]	.46	.06	.21	[-0.38, 0.49]	.78	.34	.16	[0.02, 0.64]	.04

Note. $N_{\text{family}} = 488$; $N_{\text{romantic Relationship}} = 347$; $N_{\text{friendship}} = 505$; CI = Confidence interval. Significant results ($p < .05$) are presented in bold. In each model, predictors were goal importance, goal attainability, age, and interaction effects with age. Results are controlled for the stability of the outcome measure. For family satisfaction, explained variance associated with fixed effects was $R^2_{\text{health}} = .22$, $R^2_{\text{personal growth}} = .22$, $R^2_{\text{prosocial engagement}} = .23$, $R^2_{\text{social relations}} = .24$, $R^2_{\text{status}} = .22$, $R^2_{\text{work}} = .23$. For relationship satisfaction, explained variance associated with fixed effects was $R^2_{\text{health}} = .31$, $R^2_{\text{personal growth}} = .30$, $R^2_{\text{prosocial engagement}} = .35$, $R^2_{\text{social relations}} = .32$, $R^2_{\text{status}} = .31$, $R^2_{\text{work}} = .31$. For friendship satisfaction, explained variance associated with fixed effects was $R^2_{\text{health}} = .32$, $R^2_{\text{personal growth}} = .30$, $R^2_{\text{prosocial engagement}} = .32$, $R^2_{\text{social relations}} = .31$, $R^2_{\text{status}} = .31$, $R^2_{\text{work}} = .31$.

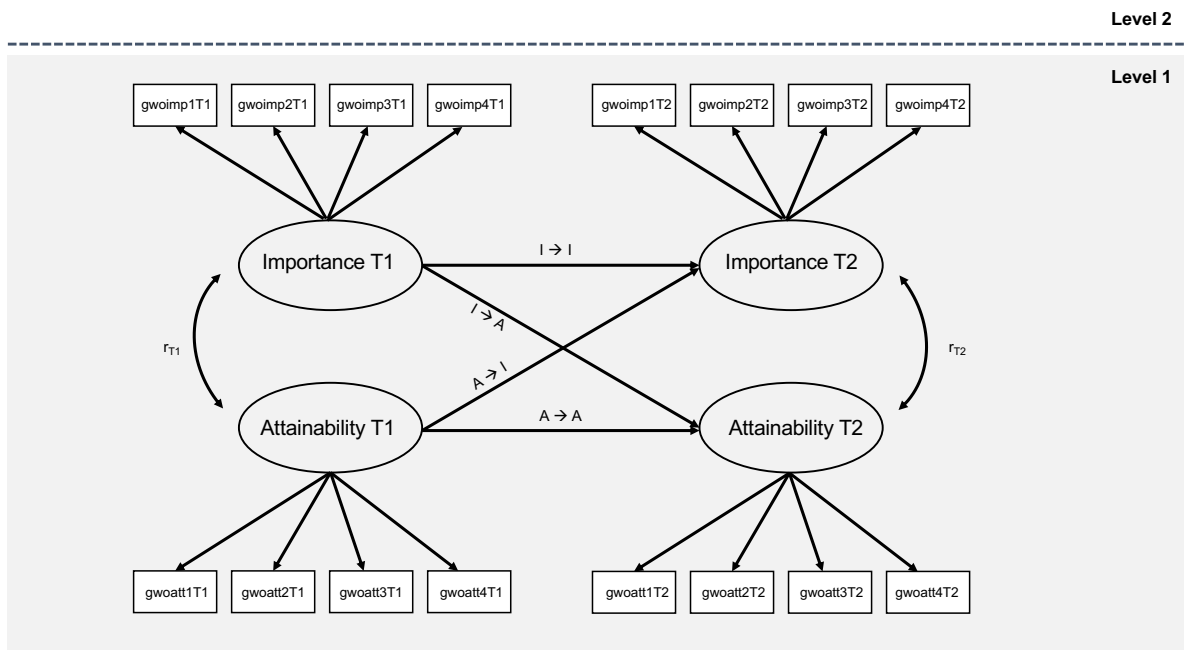


Figure S1. Multilevel structural equation model of the dynamic association between goal importance and goal attainability (Hypothesis 2) exemplified for work goals. Abbreviations: gwoimp1T1 = work-goal importance at Time 1 (Item 1); gwoimp1T2 = work-goal importance at Time 2 (Item 1); gwoatt1T1 = work-goal attainability at Time 1 (Item 1); gwoatt1T2 = work-goal attainability at Time 2 (Item 1); r_{T1} = concurrent correlation between goal importance and goal attainability at Time 1; r_{T2} = concurrent correlation between goal-importance residual and goal-attainability residual at Time 2. I → I = stability effect of goal importance from Time 1 to Time 2; A → A = stability effect of goal attainability from Time 1 to Time 2; I → A = effect of goal importance at Time 1 on goal attainability at Time 2, controlling for the stability of goal attainability. A → I = effect of goal attainability at Time 1 on goal importance at Time 2, controlling for the stability of goal importance. Other abbreviations can be interpreted following the format of gwoimp1T1 and gwoatt1T1, where the first number refers to the item number and the second number refers to time. Level 2 represents the family level and Level 1 the individual level.

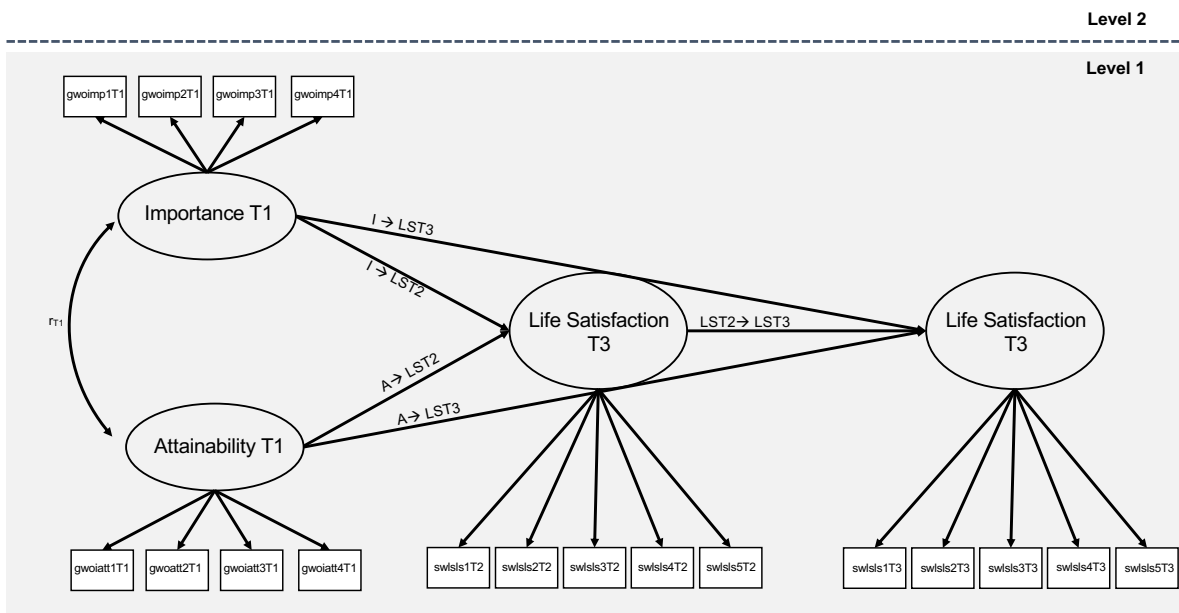


Figure S2. Multilevel structural equation model of the predictive effect of the association between goal importance and goal attainability at Time 1 on outcomes at Time 2 and Time 3 (Hypothesis 3) exemplified for the association between work goals and life satisfaction. *Abbreviations.* gwoimp1T1 = work-goal importance at Time 1 (Item 1); gwoatt1T1 = work-goal attainability at Time 1 (Item 1); swsls1T2 = life satisfaction at Time 2 (Item 1); swsls1T3 = life satisfaction at Time 3 (Item 1); r_{T1} = concurrent correlation between goal importance and goal attainability at Time 1. $I \rightarrow LST2$ = predictive effect of goal importance on life satisfaction at Time 2, controlling for the stability of life satisfaction (from Time 1 to Time 2); $A \rightarrow LST2$ = predictive effect of goal attainability on life satisfaction at Time 2, controlling for the stability of life satisfaction (from Time 1 to Time 2); $I \rightarrow LST3$ = predictive effect of goal importance on life satisfaction at Time 3, controlling for the stability of life satisfaction (from Time 1 to Time 3); $A \rightarrow LST3$ = predictive effect of goal attainability on life satisfaction at Time 2, controlling for the stability of life satisfaction (from Time 1 to Time 3); $LST2 \rightarrow LST3$ = stability effect of life satisfaction from Time 2 to Time 3. Other abbreviations can be interpreted following the format of gwoimp1T1 and gwoatt1T1, where the first number refers to the item number and the second number refers to time. Level 2 represents the family level and Level 1 the individual level.

APPENDIX D: Study 4

Does Michelangelo Care About Age?
An Adult Life-span Perspective on the Michelangelo Phenomenon

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Does Michelangelo care about age? An adult life-span perspective on the Michelangelo phenomenon

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Abstract

Humans are motivated to expand their actual self toward an ideal self. Known as the *Michelangelo phenomenon*, movement toward the ideal self can be facilitated through an affirming romantic partner and is linked to positive life outcomes. Yet, research on the Michelangelo phenomenon has primarily focused on young adult samples, and it remains unknown whether the framework generalizes across the adult life span. The authors addressed this shortcoming by examining the Michelangelo phenomenon in a three-generation sample of 505 adults aged 18–90 years ($M = 47.2$ years). Multilevel analyses revealed one age effect on the framework, showing that being seen by the partner in a manner congruent with one's ideal self (i.e., partner perceptual affirmation) becomes more important for relationship satisfaction with increasing age. Otherwise, age did not affect the Michelangelo phenomenon, suggesting life-span generalizability of the framework. By highlighting personal growth processes that continue across the life span, the present findings add to theories of successful aging.

Keywords

Adult life span, Michelangelo phenomenon, personal growth, romantic relationships, theories of aging

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The best love is the one that makes you a better person, without changing you into someone other than yourself.

—Unknown

People across the life span pursue personal growth (Deci & Ryan, 2000), and although this growth can occur without input from other people, it is often through close others that individuals are most likely to develop themselves (Fitzsimons, Finkel, & VanDellen, 2015). Due to the nature of strong interdependence, some of the most powerful effects on personal growth are thought to occur in romantic relationships, as romantic partners hold the potential to shape each other's dispositions, values, and behavioral tendencies (Rusbult et al., 2005). In particular, the *Michelangelo phenomenon* (Drigotas, Rusbult, Wieselquist, & Whitton, 1999; Rusbult, Finkel, & Kumashiro, 2009) describes how individuals are more likely to display behavioral tendencies that are key features of their ideal self when their romantic partner perceptually and behaviorally affirms that ideal self. Finally, moving toward the ideal self is linked to a wide range of personal and relational benefits (Drigotas, 2002; Drigotas et al., 1999; Rusbult, Finkel, et al., 2009).

Every life phase holds its particular developmental challenges and tasks (Staudinger & Bluck, 2001). Given that most research on the Michelangelo phenomenon has been undertaken with samples of young adults, it is not yet known if the Michelangelo phenomenon occurs as a general principle in romantic relationships across the life span. Research on developmental and personality psychology and in particular on emerging adulthood suggests that age-related priorities, developmental tasks, and changing social roles affect the processes of maturation, personality change, and personal growth (e.g., Arnett, 2000; Erikson, 1959; Havighurst, 1972; Hogan & Roberts, 2004; McAdams, 2015) and may affect the Michelangelo phenomenon.

The Michelangelo phenomenon

Studied for decades in the field of psychology, personal growth has had many names, including ego ideal (Freud, 1923), self-actualization (Maslow, 1962; Rogers, 1961), and self-determination (Deci & Ryan, 2000). The underlying theories are based on the assumption that growth striving is a primary human motive (Deci & Ryan, 2000) that leads people to have a conception of their future self, expressed as a life goal or ideal self (Higgins, 1987; Markus & Nurius, 1986). Life goals and ideal selves represent *characteristic adaptations* (McAdams & Pals, 2006) that are context dependent, embedded in a certain life stage, and somewhat malleable to change. Romantic relationship contexts, in particular, are a breeding ground for moving toward the ideal self and offer an environment that provides manifold opportunities for growth (Kelley & Thibaut, 1978; Rusbult & Van Lange, 2003). Analogous to the sculptural process of the artist Michelangelo Buonarroti—who allegedly said that he was revealing the ideal figures already within the marble, rather than creating the figures himself—the Michelangelo phenomenon conceives romantic partners as the sculptors of each other's self (Rusbult et al., 1999).

Key components characterize the framework of the Michelangelo phenomenon. First, *partner perceptual affirmation* describes the extent to which a partner perceives the other partner (i.e., the target) in a way that is congruent with the target's ideal self (Rusbult, Kumashiro, Kubacka, & Finkel, 2009). For instance, Tom sees Julia as a caring and generative person, which corresponds to Julia's representation of her ideal self. Tom's perception may be conscious (e.g., through previous conversation and observation) or unconscious (e.g., based on congruent personal values; Drigotas et al., 1999). Partners not only develop these beliefs about the other's strengths and limitations, but they also tend to act accordingly (Rusbult et al., 2005). Consequently, partner perceptual affirmation fuels *partner behavioral affirmation*, that is, the extent to which the partner draws out the best in the other person and elicits a subset of possible behaviors reinforcing the target's ideal-congruent qualities (Drigotas et al., 1999; Rusbult et al., 2005; Rusbult, Kumashiro, et al., 2009). For instance, Tom may praise Julia for her caring behavior with their children or encourage her to continue her volunteer work in community development. Finally, through repeated interactions with a perceptually and behaviorally affirming partner, the target comes to behave in a way that is close to the partner's perceptions and expectations (Drigotas et al., 1999) and experiences *movement toward the ideal self* (Rusbult, Kumashiro, et al., 2009). For instance, Tom's support of Julia's values and interests gives Julia the opportunity to further develop these values and to move toward her ideal self as a caring and generative person. However, she might also move further away from her ideal self or remain in a stagnant position if Tom provides no affirmation or even disaffirms her ideal self (Drigotas et al., 1999). Finally, moving toward the ideal self is linked to positive personal and interpersonal outcomes (Drigotas, 2002; Rusbult et al., 2005).

Overall, the Michelangelo phenomenon suggests that romantic partners and their relationships are most likely to thrive when ideal selves are nurtured (Rusbult et al., 2005). The main associations in the framework are summarized in Figure 1: Partner perceptual affirmation facilitates partner behavioral affirmation (partner-affirmation hypothesis), partner behavioral affirmation promotes movement toward the ideal self (movement-toward-ideal hypothesis), and movement toward the ideal self is associated with enhanced relationship and life satisfaction (well-being hypothesis).

The framework corresponds to other models positing that changes in the self can happen as a function or result of a relationship. For instance, the *circle of security in adulthood* (Feeney, 2004) describes how partners promote each other's growth by supporting exploratory opportunities for goal pursuit. Furthermore, the *self-expansion model* (Aron & Aron, 1986) highlights that people are motivated to form and maintain romantic relationships that add desirable aspects to their sense of self (see also Mattingly & Lewandowski, 2014). For instance, by including the other in the self, partners become more closely intertwined and cognitively linked to each other (Agnew, Van Lange, Rusbult, & Langston, 1998; Aron, Aron, & Smollan, 1992). Whereas the circle of security in adulthood and the self-expansion model describe intrapersonal and interpersonal benefits that are comparable to the outcomes of the Michelangelo phenomenon (e.g., Brunstein, Dangelmayer, & Schultheiss, 1996; Feeney, 2004; Molden, Lucas, Finkel, Kumashiro, & Rusbult, 2009), the latter emphasizes that it is not self-expansion

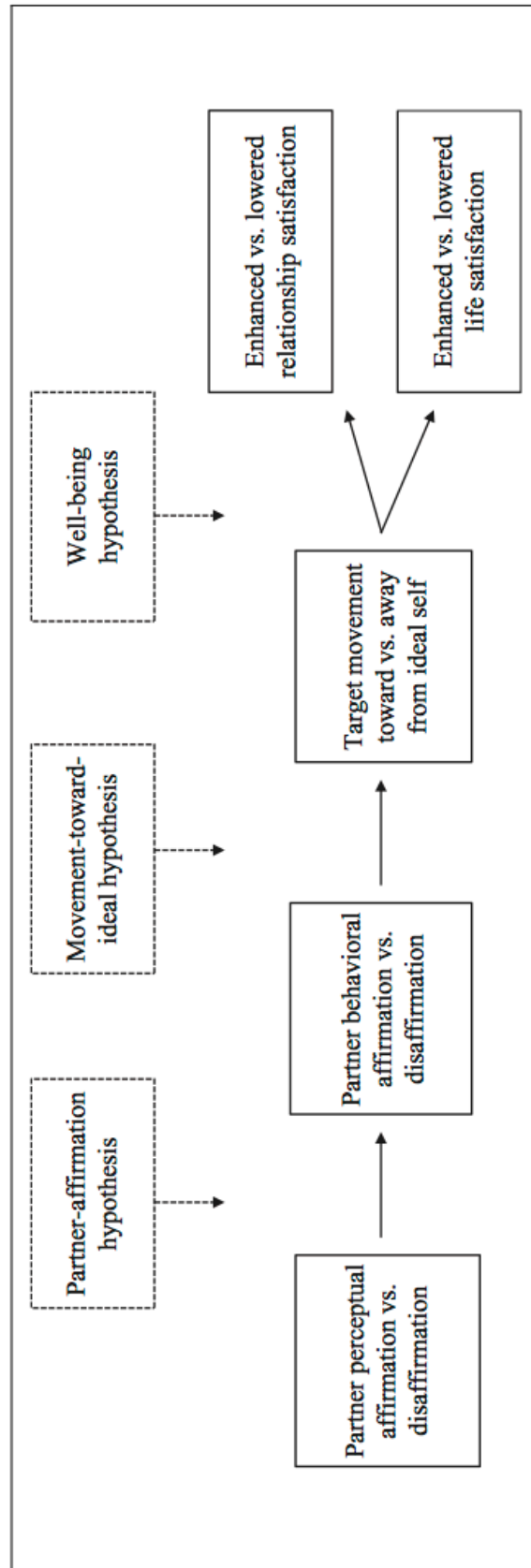


Figure 1. The Michelangelo phenomenon; based on Drigotas, 2002; Drigotas, Rusbult, Wieselquist, & Whitton, 1999; Rusbult, Finkel, & Kumashiro, 2009.

or self–other merging per se but expansion toward the *ideal* self (Drigotas et al., 1999; Rusbult et al., 2005) that promotes positive outcomes.

Personal growth across the adult life span

Research on the Michelangelo phenomenon has led to a number of important findings, yet most studies have been conducted among college students in the U.S. (e.g., Drigotas et al., 1999; Rusbult, Kumashiro, et al., 2009), a demographic that typically adheres to a philosophy of personal growth and self-expansion (Arnett, 2000) and is in a life stage characterized by identity exploration and change (Drigotas et al., 1999). From these findings, it can be assumed that the core of the Michelangelo phenomenon—movement toward the ideal self—is a characteristic of young adults and important to their well-being; it needs to be tested whether the framework generalizes to middle-aged and older adults.

Several theoretical frameworks suggest that age may affect personal growth processes. Most prominently, Erikson's (1959, 1963) theory of psychosocial development and Havighurst's (1972) developmental tasks theory suggest that each life stage includes responsibilities and challenges that place a person on the path to a desired change (Hutteman, Hennecke, Orth, Reitz, & Specht, 2014). In a period where a full panoply of choices and life paths exists, *young adults* (roughly ages 18–35 years) are concerned with understanding who they are and who they want to be (McAdams, 2015), are growth oriented, and seek to gain new information (Carstensen, Pasupathi, Mayr, & Nesselrode, 2000; Heckhausen, Dixon, & Baltes, 1989). Furthermore, young adults need to make far-reaching occupational decisions and have to take their first steps in the job market (Lüdtke, Roberts, Trautwein, & Nagy, 2011). Besides themes of identity, young adults deal with intimacy as they build their first long-term relationships (Erikson, 1959, 1963). To harmonize the two desires of identity and intimacy, young adults seek out those relationships that fulfill their need for personal growth (Lerner, Theokas, & Jellicic, 2005). They tend to promote their own development in these relationships and consider personal growth crucial for their well-being (Lerner et al., 2005). Finally, it is in young adulthood that individuals are in the process of acquiring new skills and seeking to reach their full potential (e.g., Arnett, 2000; Carstensen et al., 2000; Ebner, Freund, & Baltes, 2006; Havighurst, 1972). *Middle-aged adults* (roughly ages 36–59 years), in contrast, are more concerned with maintaining and securing the gains and relationships they have already established (Havighurst, 1972). Their orientation is directed toward the next generation, expressed in aspirations of raising children, prosocial engagement, passing on traditions, and in themes of generativity (Freund & Riediger, 2006; McAdams, 2015). Finally, *older adults* (roughly age 60 years and older) center on maintaining functional abilities and avoiding losses, expressed in valuing health and pursuing leisure activities (Ebner et al., 2006; Heckhausen et al., 1989; Heckhausen, Schulz, & Wrosch, 1998; Ogilvie, Rose, & Heppen, 2001). Older adults seek to connect their life experiences to larger life themes, described as aspiring wisdom (Bluck & Glück, 2004; Erikson, 1959; Sternberg, 1990). Whereas personal growth was argued to be a topic of outstanding importance in young adulthood, personal growth tends to decrease in late adulthood (Ryff, 1995).

Taken together, life stages with their normative expectations and structural opportunities suggest developmental tasks that lay the ground for specific ideal-self *contents* in the respective life stages (Hutteman et al., 2014). Whether the *processes* to achieve these ideal selves in romantic relationships (i.e., the Michelangelo phenomenon) are the same across the adult life span was the focus of the present investigation.

The present research

To explore to what extent the Michelangelo phenomenon is applicable across adulthood, we (1) tested the framework in an age-heterogeneous sample and (2) investigated age effects on the framework. We developed one research question and two hypotheses. First, as a research question, we tested whether the associations between the framework's key components appear similar in an age-heterogeneous sample. Second, given that personal growth and self-exploration have been identified as primary motives among young adults (e.g., Arnett, 2000; Erikson, 1959) but may become less important with age (Ryff, 1995), we expected age effects on movement toward the ideal self but not on any other variable of the framework. In particular, we expected that movement toward the ideal self would be highest for young adults and would decline with age. Third, given the role personal growth plays in romantic relationships and life choices among young adults (Lerner et al., 2005), we expected that the well-being hypothesis of the Michelangelo phenomenon would be moderated by age. In particular, we predicted that movement toward the ideal self would be important for life and relationship satisfaction in young age but would decline in importance with age. Such declines may stem from older adults' limited opportunities for continued growth, the reduced importance they give to personal growth, or their general perception of time as limited rather than open-ended (Carstensen, Isaacowitz, & Charles, 1999; Ryff, 1995). We expected no age effects on other associations of the framework (i.e., partner-affirmation hypothesis and movement-toward-ideal hypothesis). Overall, testing whether movement toward the ideal self occurs across the adult life span and whether movement toward the ideal self exhibits similar effects on well-being across adulthood may add to theories of successful aging (for discussions, see Ryff, 1995).

It needs to be stressed that age correlates with relationship duration, and that relationship duration may also have an effect on self-expansion processes in the romantic domain (Fivecoat, Tomlinson, Aron, & Caprariello, 2015). While developmental research suggests that personal growth is of major importance for young adults (e.g., Havighurst, 1972), it has also been argued that personal development is particularly important during the early stages of a relationship (Mattingly, Lewandowski, & McIntyre, 2014). Especially at the onset of a romantic relationship, idealization can influence how supportive and affirmative a person perceives his or her partner to be (Murray, Holmes, & Griffin, 1996) and how intuitively self-expansion is experienced (Mattingly et al., 2014). Furthermore, the motivational context of relationships among romantic partners of shorter duration tends to be attainment focused, whereas the context of relationships among married partners is maintenance focused (Berscheid & Regan, 2005). Likewise, whereas perceived support for promotion support is particularly important for dating couples, perceived support for both promotion and prevention

support is relevant for married couples (Molden et al., 2009). Thus, one could argue that growth-oriented goals, promotion support, and personal movement toward the ideal self are expressed more in the early stages of a romantic relationship than in later years. However, Fivecoat et al. cautioned against generalizing their findings, as no participants in their study were in a relationship longer than 5 years. Instead they suggested viewing their results as an initial indication. Therefore, in addition to the analyses of age effects, we tested the parallel argument of relationship–duration effects—specifically, whether movement toward the ideal self declines with increasing relationship duration and whether the well-being hypothesis is moderated by relationship duration.

Method

Sample and procedure

Data were obtained from the longitudinal three-generation multidisciplinary *Co-Development in Personality (CoDiP)* study that was conducted in the German-speaking part of Switzerland. Approval for the CoDiP study was received from the regional ethics committee Basel (approval number: 175/09) at the University of Basel, Switzerland. The initial sample of the CoDiP study was 1,050 individuals from three generations of a family, with young adults participating with their parents and grandparents. At the last measurement occasion, which was 4 years after the beginning of the study, 664 participants remained in the study. Of these, 505 indicated being in a romantic relationship. Given that the Michelangelo phenomenon had only been assessed at this last measurement occasion, these 505 participants became the current sample.

Participants ranged in age from 18 to 90 years ($M = 47.20$ years, $SD = 20.52$; 58% female, 42% male) and their mean relationship duration was 20.2 years ($SD = 18.12$ years), ranging from 1 month to 64 years. Fifty-two percent of the participants were married and 60% had children. Twenty-five percent of the participants had earned a degree from a university, 21.7% had undertaken vocational training, and 14.6% had finished high school. The majority of participants were working, either full (26.7%) or part (31.6%) time; 16.2% were in school, and 23.3% were not actively involved in the labor market. On average, participants had a monthly household income of 9,114.93 Swiss francs (U.S. dollars: 10,056; reference date February 1, 2014; 1 Swiss franc = 1.03 U.S. dollars), which is slightly more than the average Swiss monthly household income of 7,112 Swiss francs (U.S. dollars: 7,625). Most participants were Swiss (89.7%) with 8.9% having a second nationality (e.g., Italian or German).

Measures

Partner perceptual affirmation. We measured the first component of the Michelangelo phenomenon—partner perceptual affirmation—with 5 items that were translated from the original scale (Drigotas et al., 1999) into German. Participants rated statements such as “My partner regards me as the sort of person I would most like to become” on a 5-point Likert-type scale ranging from 1 (*do not agree at all*) to 5 (*agree completely*). With a Cronbach’s α of .79, the internal reliability was satisfactory.

Partner behavioral affirmation. The second component of the Michelangelo phenomenon—partner behavioral affirmation—was assessed with a German translation of the 5-item questionnaire by Drigotas et al. (1999). Participants rated statements such as “Because of the way my partner acts with me, I am able to be my best self” on a 5-point Likert-type scale ranging from 1 (*do not agree at all*) to 5 (*agree completely*). The internal reliability was good ($\alpha = .81$).

Movement toward the ideal self. To measure the third component of the Michelangelo phenomenon—movement toward the ideal self—we asked participants to reflect on how they would ideally like to be and to name up to four attributes of their ideal self (Drigotas et al., 1999). Participants reported various personal (e.g., “calm”), social (e.g., “helpful”), and professional (e.g., “successful”) attributes, as they have been roughly grouped in previous studies (Rusbult, Kumashiro, et al., 2009). Next, participants were asked to think about their current romantic relationship and to indicate for each ideal self whether they had moved closer to or further away from this ideal self as a result of being in the relationship. Movement was rated on a 7-point Likert-type scale ranging from 1 (*moved away*) through 4 (*unchanged*) to 7 (*moved closer*). The mean of each participant’s ratings was used to indicate overall movement toward the ideal self. Cronbach’s α was satisfactory ($\alpha = .73$).

Life satisfaction. Life satisfaction was measured with the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) in its German version (Glaesmer, Grande, Braehler, & Roth, 2011). Participants rated 5 items (e.g., “The conditions of my life are excellent.”) on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The internal reliability was good ($\alpha = .84$).

Relationship satisfaction. Relationship satisfaction was assessed with the Relationship Assessment Scale (Hendrick, 1988) in its German version (Sander & Böcker, 1993). Participants rated 7 items (e.g., “How well does your partner meet your needs?”) on a 5-point Likert-type scale ranging from 1 (*low satisfaction*) to 5 (*high satisfaction*). Cronbach’s α was excellent ($\alpha = .90$).

Data analyses

Given that our sample included individuals from the same family, their data may not have been independent. To test for interrelations between family members, we calculated the intraclass correlation coefficients (ICCs) for the key variables of the framework (i.e., partner perceptual affirmation, partner behavioral affirmation, movement toward the ideal self, life satisfaction, and relationship satisfaction). ICC scores ranged from .14 to .22, suggesting the importance of taking family membership into account. We therefore conducted all analyses with a multilevel modeling approach using the lme4 package in R (Bates, Maechler, Bolker, & Walker, 2015). Level 1 represents the individual’s variation, and we controlled for variation between families on Level 2. All predictors, including age, were grand mean centered. Except for presenting descriptive statistics, age was used as a continuous variable in all analyses. Missing values occurred in key variables but were small in percentage (from 1% in life satisfaction measures to 2.2% in

Table 1. Means and Standard Deviations of the Michelangelo Phenomenon's Key Variables

Variable	Age-group							
	Total sample		Young adults ^a		Middle-aged adults ^b		Older adults ^c	
	M	SD	M	SD	M	SD	M	SD
Partner perceptual affirmation	3.41	0.68	3.58	0.62	3.24	0.74	3.39	0.62
Partner behavioral affirmation	3.73	0.68	3.96	0.59	3.58	0.71	3.61	0.66
Movement toward ideal self	5.02	0.99	5.08	0.84	4.96	1.06	4.99	1.11
Relationship satisfaction	4.34	0.55	4.48	0.48	4.21	0.58	4.29	0.55
Life satisfaction	4.05	0.61	4.09	0.62	4.04	0.60	4.00	0.62

^aAge 18–35 years; $n = 197$.

^bAge 36–59 years; $n = 178$.

^cAge 60 years and over; $n = 130$.

behavioral affirmation); they were handled with the maximum likelihood estimation approach.

First, we tested the main associations of the Michelangelo phenomenon and calculated intercorrelations between the framework's key variables in the age-heterogeneous sample. Second, we ran multilevel regression analyses using age as a predictor on key variables of the Michelangelo phenomenon. As a parallel argument, we used relationship duration as a predictor on the key variables. Third, we ran multilevel regression analyses to test for moderating effects of age on the main associations of the framework. Again, we tested for the moderating effect of relationship duration as a parallel argument.¹ As in previous studies (e.g., Drigotas, 2002), we additionally ran analyses that accounted for relationship satisfaction when predicting life satisfaction.

Results

Descriptive statistics of key variables of the framework

Table 1 displays the means and standard deviations of the Michelangelo phenomenon's key variables for the whole sample. To orient the reader, we also display means and standard deviations broken down by age-group.

Associations between key components of the framework

Table 2 provides zero-order correlations between key variables of the Michelangelo phenomenon (see Figure 1: partner perceptual affirmation, partner behavioral affirmation, movement toward the ideal self, life satisfaction, and relationship satisfaction), age, and relationship duration. Key variables of the framework related to one another in predicted ways. Partner perceptual affirmation was positively linked to partner behavioral affirmation (i.e., partner-affirmation hypothesis), both of which were positively associated with movement toward the ideal self (i.e., movement-toward-ideal hypothesis). Affirmation indices and movement toward the ideal self showed positive associations with life and relationship satisfaction (i.e., well-being hypothesis). Additionally, affirmation indices

Table 2. Pearson correlations between key variables of the Michelangelo phenomenon (variables 1–5), age, and relationship duration.

Variable	1	2	3	4	5	6	7
1. Partner perceptual affirmation	—						
2. Partner behavioral affirmation	.74***	—					
3. Movement toward ideal self	.13**	.22***	—				
4. Life satisfaction	.26***	.31***	.21***	—			
5. Relationship satisfaction	.39**	.56***	.27***	.43***	—		
6. Age	-.13**	-.24***	-.06	-.05	-.17***	—	
7. Relationship duration	-.16***	-.24***	-.06	-.02	-.16***	.82***	—

* $p < .05$; ** $p < .01$; *** $p < .001$.

were negatively linked to age and relationship duration; movement toward the ideal self showed no associations with age or relationship duration. Age and relationship duration were positively correlated with each other. Relationship satisfaction was negatively associated with both age and relationship duration, whereas no associations with age and relationship duration emerged for life satisfaction. The two satisfaction indices correlated positively with each other. The results suggest applicability of the framework to an age-heterogeneous sample. To more thoroughly illuminate the influence of age on the framework, we tested for age as a *predictor* on the key variables of the framework and for age as *moderator* on the main associations of the framework. In both analyses, we also accounted for the parallel argument and tested for relationship–duration effects.

Age and relationship duration as predictors on key variables of the framework

The left side of Table 3 displays the regression effects with age as predictor on the framework's key variables. Results reveal three significant age effects. Age was negatively associated with partner perceptual affirmation and partner behavioral affirmation. With increasing age, participants reported receiving less partner perceptual and behavioral affirmation. Finally, relationship satisfaction was negatively linked to age. With increasing age, people were significantly less satisfied in their relationship.

Given that age and relationship duration highly correlate with each other, we ran the same analyses with relationship duration as predictor variable. Similar to age, relationship duration served as a negative predictor for partner perceptual affirmation, partner behavioral affirmation, and relationship satisfaction (Table 3, right side). With increasing relationship duration, participants indicated lower scores on these variables. Next, to test how age and relationship duration affect the main associations within the framework, we tested age and relationship as moderator variables.

Age and relationship duration as moderators on main associations of the framework

The Michelangelo phenomenon was tested stepwise in the sense that we examined whether each component of the framework was predicted by the preceding component

Table 3. Multilevel regression effects of age and relationship duration on the Michelangelo phenomenon's key variables.

Variable	Effects of age				Effects of relationship duration			
	B	SE	95% CI	p Value	B	SE	95% CI	p Value
Partner perceptual affirmation	-.004	.002	[-0.007, -0.001]	.003	-.051	.014	[-0.080, -0.023]	<.001
Partner behavioral affirmation	-.008	.001	[-0.010, -0.005]	<.001	-.077	.014	[-0.105, -0.050]	<.001
Movement toward ideal self	-.004	.002	[-0.008, 0.001]	.083	-.035	.022	[-0.078, 0.008]	.113
Relationship satisfaction	-.005	.001	[-0.007, -0.002]	<.001	-.042	.012	[-0.065, -0.020]	<.001
Life satisfaction	-.002	.001	[-0.005, 0.001]	.121	-.005	.013	[-0.030, 0.021]	.721

Note. Age was grand mean centered. Relationship duration in months was grand mean centered and divided by 100. Significant results ($p < .05$) are presented in bold. CI = confidence interval.

(e.g., Does partner perceptual affirmation significantly predict partner behavioral affirmation?). Table 4 shows the results of the multilevel regression analyses with relationship satisfaction as outcome. First, we tested whether partner perceptual affirmation predicted partner behavioral affirmation and whether this association was moderated by age. Partner perceptual affirmation was a significant predictor of partner behavioral affirmation, but age did not moderate this effect. Second, we tested whether partner perceptual and behavioral affirmation predicted movement toward the ideal self. Partner behavioral affirmation showed a significant positive effect on movement. Age did not moderate the effect. No effect emerged for partner perceptual affirmation on movement. Finally, we analyzed whether partner perceptual affirmation, partner behavioral affirmation, and movement toward the ideal self predicted relationship satisfaction. Positive effects on relationship satisfaction emerged for partner behavioral affirmation and for movement toward the ideal self. Individuals who reported more partner behavioral affirmation and more movement toward the ideal self tended to be more satisfied with their relationship. Interaction effects of age and movement toward the ideal self slightly passed the significance threshold. No main effect emerged for partner perceptual affirmation. However, a significant interaction between partner perceptual affirmation and age was observed, indicating that the importance of partner perceptual affirmation for relationship satisfaction increased with age.

To account for the parallel argument, we tested the moderating effect of relationship duration on the main linkages of the Michelangelo phenomenon. Similar effects for partner behavioral affirmation and movement toward the ideal self were observed, but no significant interaction between partner perceptual affirmation and relationship duration emerged (Table 4, right side).

Table 5 shows the results of the multilevel regression analyses with life satisfaction as outcome. Given that the partner-affirmation hypothesis and the movement-toward-ideal

Table 4. Multilevel regression analyses predicting partner behavioral affirmation, movement toward the ideal self, and relationship satisfaction from key variables and their interactions with the moderator variables age and relationship duration.

Variable	Relationship satisfaction							
	Age as moderator				Relationship duration as moderator			
	B	SE	95% CI	<i>p</i> Value	B	SE	95% CI	<i>p</i> Value
PBA								
PPA	.733	.030	[0.675, 0.791]	<.001	.738	.030	[0.680, 0.797]	<.001
PPA × moderator	.001	.002	[-0.002, 0.004]	.482	.015	.015	[-0.013, 0.044]	.294
M								
PPA	-.083	.094	[-0.268, 0.102]	.380	-.056	.096	[-0.244, 0.133]	.562
PBA	.370	.096	[0.183, 0.558]	<.001	.343	.097	[0.153, 0.533]	<.001
PPA × moderator	.003	.005	[-0.007, 0.012]	.602	.043	.050	[-0.054, 0.140]	.385
PBA × moderator	-.006	.005	[-0.016, 0.003]	.196	-.061	.050	[-0.160, 0.037]	.220
Relationship satisfaction								
PPA	-.050	.044	[-0.137, 0.037]	.260	-.052	.046	[-0.141, 0.038]	.260
PBA	.454	.046	[0.364, 0.544]	<.001	.456	.047	[0.365, 0.548]	<.001
M	.081	.023	[0.037, 0.126]	<.001	.072	.023	[0.027, 0.117]	.002
PPA × moderator	.007	.002	[0.002, 0.011]	.004	.041	.024	[-0.006, 0.087]	.084
PBA × moderator	-.003	.002	[-0.007, 0.002]	.254	.002	.024	[-0.045, 0.049]	.928
M × moderator	-.002	.001	[-0.004, 0.000]	.055	-.004	.011	[-0.025, 0.017]	.706

Note. Predictor and moderator variables (age and relationship duration) were grand mean centered. Significant results ($p < .05$) are presented in bold. CI = confidence interval; PBA = partner behavioral affirmation; PPA = partner perceptual affirmation; M = movement toward ideal self.

Table 5. Multilevel regression analyses predicting life satisfaction from key variables and their interactions with the moderator variables age and relationship duration.

Variable	Life satisfaction							
	Age as moderator				Relationship duration as moderator			
	B	SE	95% CI	<i>p</i> Value	B	SE	95% CI	<i>p</i> Value
PPA	.087	.059	[-0.030, 0.202]	.141	.052	.060	[-0.064, 0.169]	.378
PBA	.163	.061	[0.044, 0.282]	.007	.189	.061	[0.070, 0.308]	.002
M	.086	.030	[0.026, 0.145]	.005	.090	.030	[0.031, 0.148]	.003
PPA × moderator	.001	.003	[-0.005, 0.007]	.751	-.036	.031	[-0.097, 0.024]	.240
PBA × moderator	.003	.003	[-0.003, 0.009]	.398	.085	.031	[0.023, 0.146]	.007
M × moderator	.001	.001	[-0.002, 0.004]	.503	.014	.014	[-0.013, 0.042]	.302

Note. Predictor and moderator variables (age and relationship duration) were grand mean centered. Significant results ($p < .05$) are presented in bold. CI = confidence interval; PBA = partner behavioral affirmation; PPA = partner perceptual affirmation; M = movement toward ideal self.

Table 6. Multilevel regression analyses predicting life satisfaction from key variables and their interactions with the moderator variables age and relationship duration controlling for relationship satisfaction.

Variable	Life satisfaction							
	Age as moderator				Relationship duration as moderator			
	B	SE	95% CI	p Value	B	SE	95% CI	p Value
Relationship satisfaction	.380	.061	[0.260, 0.499]	<.001	.369	.060	[0.251, 0.487]	<.001
PPA	.110	.057	[-0.002, 0.222]	.054	.076	.058	[-0.038, 0.189]	.202
PBA	-.018	.065	[-0.145, 0.110]	.784	.013	.065	[-0.115, 0.141]	.845
M	.056	.030	[-0.002, 0.114]	.061	.064	.029	[0.006, 0.121]	.030
PPA × moderator	-.001	.003	[-0.007, 0.004]	.652	-.050	.030	[-0.108, 0.009]	.099
PBA × moderator	.003	.003	[-0.003, 0.009]	.272	.081	.030	[0.022, 0.140]	.008
M × moderator	.001	.001	[-0.001, 0.004]	.302	.014	.014	[-0.013, 0.041]	.309

Note. Predictor and moderator variables (age and relationship duration) were grand mean centered. Significant results ($p < .05$) are presented in bold. CI = confidence interval; PBA = partner behavioral affirmation; PPA = partner perceptual affirmation; M = movement toward ideal self.

hypothesis have already been tested and presented in Table 4, in Table 5 we present only the well-being hypothesis with life satisfaction as outcome variable. Similar to the effects for relationship satisfaction, partner behavioral affirmation and movement toward the ideal self positively predicted the outcome variable. No interaction with age emerged. When we controlled for relationship satisfaction, key variables of the Michelangelo phenomenon no longer predicted life satisfaction (Table 6).

To account for the parallel argument, we tested relationship duration as a moderating variable on the main associations of the framework (Table 5, right side). Similar to the results with age as moderator, partner behavioral affirmation and movement toward the ideal self positively predicted life satisfaction. Additionally, a significant interaction between relationship duration and partner behavioral affirmation was observed, which did not emerge in the analyses with age as a moderating variable. We found this interaction effect to be significant in analyses with and without controlling for relationship satisfaction (Table 6). For individuals with higher relationship duration, higher partner behavioral affirmation resulted in higher life satisfaction, whereas this was not the case for individuals who had lower relationship duration.

Discussion

People across the life span are driven to develop themselves (e.g., Deci & Ryan, 2000; Maslow, 1962; Rogers, 1961). In the present study, we explored one of the most prominent growth-striving frameworks in the context of romantic relationships (i.e., the Michelangelo phenomenon) across the adult life span. We tested the effect of age on the key variables and main associations of the Michelangelo phenomenon. Additionally, we

took parallel explanations into consideration and tested for effects of relationship duration on the framework's key components and main associations.

The Michelangelo phenomenon across adulthood

First, we investigated whether the Michelangelo phenomenon applies across adulthood. Findings of the present study support the main associations of the Michelangelo phenomenon (see Figure 1) in an age-heterogeneous sample: Partner perceptual affirmation was linked to partner behavioral affirmation, which was linked to movement toward the ideal self, with benefits for life and relationship satisfaction. Next, we more thoroughly tested the framework across the individual life span (i.e., effects of age) and across the relational life span (i.e., effects of relationship duration). Age and relationship duration affected the framework's components partner perceptual affirmation, partner behavioral affirmation, and relationship satisfaction. With increasing age and relationship duration, individuals reported lower partner affirmation and lower relationship satisfaction. These effects can be interpreted in two ways. On the one hand, it can be argued that the partner might affirm less when age or relationship duration increases. On the other hand, one could argue that the target might be less perceptive or less accessible for affirmative acts of the partner when age or relationship duration increases. Future research is needed to more thoroughly investigate which of the two interpretations most likely applies.

Next, we tested whether age and relationship duration affect the main associations of the framework. Three findings are highlighted. First, irrespective of age and relationship duration, partner behavioral affirmation was a consistent predictor for relationship satisfaction. In other words, independent of how old individuals are or of how long they had been in their relationship, it is beneficial for relational well-being if the partner behaviorally affirms the target's ideal self. Thus, perceiving the partner as acting toward the target in a way that helps elicit the target's ideal self tends to resemble a prorelational virtue that does not lose its impact across adulthood or over the course of a relationship. Yet, partner behavioral affirmation might subsume other beneficial relationship processes, such as responsiveness or trust (e.g., Rusbult, Kumashiro, et al., 2009), and future research is needed to disentangle the particular benefits of partner behavioral affirmation from other behavioral, cognitive, or emotional relationship processes. Findings appeared slightly different when life satisfaction instead of relationship satisfaction was the outcome of interest. It was independent of age that partner behavioral affirmation yielded positive effects on life satisfaction but not independent of relationship duration. With increasing relationship duration, behavioral affirmation was beneficial for life satisfaction. Future research is needed to illuminate the processes underlying why relationship duration, but not age, moderates the effect of partner behavioral affirmation on life satisfaction.

The second finding that needs to be highlighted is that age moderated the effect of partner perceptual affirmation on relationship satisfaction, whereas relationship duration did not moderate this effect. These findings suggest that the beneficial effects of partner perceptual affirmation become more important with age but are not affected by relationship length. Thus, as people age, it seems to be more important for their relationship satisfaction to have a partner who perceptually affirms them in their ideal self. Instead of

behavioral manifestations, it seems to be perceiving the intent (i.e., attribution that the partner is doing his or her best) that is crucial. It could be argued that perceiving sources of positive affirmation might decrease when people get older, which makes the value of partner perceptual affirmation even more significant for these adults.

Third, we refer to the core of the framework, which is movement toward the ideal self. Findings from the present study have shown that it was independent of age and relationship duration that people indicated movement toward the ideal self. Thus, the findings lead us to conclude that movement toward the ideal self happens across the adult life span and across the course of a romantic relationship. Although this finding is contrary to our hypothesis, it reveals that personal growth is not a characteristic that is reserved for the young but instead takes place throughout adulthood and into old age. Furthermore, moving toward the ideal self was positively linked to relationship and life satisfaction—irrespective of age and relationship duration. These findings add to theories of successful aging, indicating that continued growth—an important feature of psychological well-being—occurs across the life course (Erikson, 1959; Ryff, 1995). It was previously argued that older adults either have limited opportunities for continued growth or ascribe less importance to personal growth (Ryff, 1995). Our findings, however, show that older adults are still aspiring to grow personally, are moving toward their ideal self through their romantic relationship, and benefit from this movement. This also corresponds to findings showing that older adults report satisfaction and experience few negative interactions in their social relationships (e.g., Birditt & Fingerman, 2003; Luong, Charles, & Fingerman, 2011). We conclude that both young adults and older adults proactively maintain ties with those relationship partners that enable them to personally grow and help them to move toward their ideal self (Lang, 2004; Lerner et al., 2005). It seems that irrespective of age and independent of relationship duration, individuals move toward their ideal self and add positive, ideal-like content to their self-concept, which nourishes benefits for personal and interpersonal outcomes. Overall, the results of the present study suggest that personal growth occurs across the individual life span and across the life span of a romantic relationship.

Future research needs to address if personal growth in late adulthood is a particular characteristic of romantic relationships or if it happens in other life domains as well. Socioemotional selectivity theory (Carstensen, 1991, 1995) and related research (e.g., Fredrickson & Carstensen, 1990) has shown that the perception of limited time leads to greater investment in close relationships. Thus, it could be that it is in close relationships that older adults experience the most powerful effects on their personal development, as this is the aspect of their life in which they invest the most. In the same sense, it has been argued that as people get older, their social network contracts, which makes their marriages become an even more important source of social support (Lang, 2000; Lang & Carstensen, 1994).

Strengths and limitations

A strength of the present study is the age-heterogeneous sample with 505 participants ranging in age from 18 to 90 years. Second, our participants were on average considerably older and had markedly longer relationship durations than U.S. samples that

were previously used to study the Michelangelo phenomenon (e.g., Drigotas et al., 1999; Rusbult, Kumashiro, et al., 2009). Third, our sample was drawn from a college and community population outside the U.S. (i.e., Switzerland). As the issue of replication remains a current concern in psychological science (Open Science Collaboration, 2012), it is considered a strength that the present study tested and supported the Michelangelo phenomenon across cultures. Fourth, to the best of our knowledge, this study is the first that explicitly tested the Michelangelo phenomenon across the adult life span.

However, the results of this study should be interpreted with some caveats in mind. First, the components of the Michelangelo phenomenon were assessed at the same measurement occasion as the outcomes. Thus, no conclusions regarding causal links can be made. However, this weakness might be compensated for by findings of previous research, which supported the benefits of the Michelangelo phenomenon on outcomes in both concurrent and longitudinal investigations (Rusbult et al., 2005). Evidence on self-expansion has further shown that although self-expansion is positive and rewarding (Acevedo, Aron, Fisher, & Brown, 2011; Xu et al., 2011), self-expansion experiences precede positive affect (Graham, 2008), and the benefits of self-expansion remain after controlling for changes in positive mood (Aron, Paris, & Aron, 1995). Thus, the positive outcomes tend to be a result of personal growth rather than an explanatory mechanism. Nevertheless, future research would benefit from assessing the Michelangelo phenomenon and its outcomes separately over time. This approach would also allow for studying mutual cyclical growth, in which later variables in the chain influence earlier variables, for instance, investigating how movement toward the ideal self and partner perceptual affirmation mutually interact with each other over time (Drigotas et al., 1999). A second limitation concerns the issue that the present study included only individual data. For future research, it would be useful to study both couple members, revealing intra and interpersonal effects on personal growth across the adult life span. Third, taking into account ontogenetic and historical contextualism, we cannot preclude the existence of cohort effects, instead of age effects (Staudinger & Bluck, 2001). Fourth, partner perceptual affirmation and partner behavioral affirmation highly correlated with each other, suggesting issues of multicollinearity. Previous research on the Michelangelo phenomenon was also confronted with these issues of correlated constructs (e.g., $r = .58$ between perceptual affirmation and behavioral affirmation in Drigotas, 2002). Given that the correlation between partner perceptual and partner behavioral affirmation is higher in the present study than in previous studies ($r = .75$ in the present study), the effects of partner perceptual affirmation might have been underestimated in this study.

Future directions

The limitations of the current study might provide a springboard for future research. First, future research might benefit from more thoroughly investigating the type of ideal self that the target is aiming for. For instance, Molden, Lucas, Finkel, Kumashiro, and Rusbult (2009) differentiated the benefits of perceived support for promotion-focused and prevention-focused goals among individuals. Applied to the Michelangelo phenomenon, research might investigate the different roles of a promotion-focused (e.g., “becoming happier”) ideal self versus a prevention-focused (e.g., “becoming more

responsible”) ideal self and their effects on outcomes. Second, in line with the two-dimensional model of relationship self-change (Mattingly et al., 2014), it might be worthwhile to differentiate the types of movement toward the ideal self along different dimensions, such as *direction* or *valence*: Whereas some individuals might increase the positive content in their ideal self, others might decrease the negative content. Although one could argue that movement toward the ideal self naturally implies an increase in positive content, little is known about the concrete valence of ideal selves, a topic for future research. Finally, Fivecoat et al. (2015) experimentally demonstrated that relationship satisfaction tends to increase more when individuals receive active, compared to passive, support for their self-expansion. These findings could be applied to research on the Michelangelo phenomenon through testing of the concrete behavioral affirmation that is enacted by the partner. As Fivecoat et al. (2015) found, movement is particularly likely to be beneficial for relationship satisfaction when partner affirmation is active rather than passive.

Conclusion

Although progress has been made in the study of personal growth in the context of romantic relationships, little attention has been paid to the effects of age in this growth process. The findings of the current study present useful avenues for understanding personal growth by providing evidence that the Michelangelo phenomenon applies across the adult life span. Individuals across the life span tend to pursue goals and build relationships that allow them to nurture their personal growth (Deci & Ryan, 2000). Thus, our findings add to theories of successful aging by underscoring the active role that partners take in the personal development of one another across adulthood.

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Note

1. Because of the high association between age and relationship duration ($r = .82$), indicating multicollinearity, we were not able to run analyses with both variables in the same model (e.g., to control for age while testing the moderating effect of relationship duration and vice versa).

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APPENDIX E: Study 5

Insights Into Couples' Everyday Lives: Relationship Processes and Their Day-to-Day Variability as Explanatory Mechanisms Underlying Personality-Relationship Transactions

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Abstract

Personality and romantic relationships are linked to each other through transactional ties. In the pursuit of better understanding personality–relationship transactions in romantic couples, this study employed a daily process perspective: Beneficial relationship processes (i.e., perceived responsiveness, positive expectations, self-disclosure) and their day-to-day variability were investigated in the transactional link between both partners' interpersonal vulnerabilities (i.e., neuroticism, low self-esteem, insecure attachment) and relationship satisfaction. We hypothesized that lower levels and higher variability of relationship processes serve as mediating mechanisms underlying vulnerability–relationship transactions. We analyzed data from 604 female-male couples aged 18 to 81 years who participated in a 2-week diary assessment with a follow-up measurement occasion after 6 months. The findings from Actor–Partner Interdependence (Mediation) Models supported our hypotheses inasmuch as couple members with interpersonal vulnerabilities experienced lower levels of beneficial relationship processes over the 2-week study period and showed higher day-to-day variability. However, only the level of these processes, not their variability, explained later relationship satisfaction. Foregrounding the postulates of transactions in romantic couples, these mediational effects were also found in the reversed direction. We conclude that insights into couples' everyday lives contribute to better understanding how personality–relationship transactions occur in romantic couples.

Keywords. Neuroticism; low self-esteem; insecure attachment; daily relationship processes; personality–relationship transactions

Introduction

What is love? After all, it is quite simple. Love is everything that enhances, widens, and enriches our life. In its heights and in its depths. Love has a few problems as a motorcar. The only problems are the driver, the passengers, and the road.

Franz Kafka in *Conversations with Kafka* by Gustav Janouch

Using the metaphor of a road trip, Franz Kafka described love as a motorcar that carries travelers on their common journey through life. To more precisely understand the journey a couple travels together, researchers have been interested in studying the personality of romantic partners as predictor of their relationship functioning and relationship development (Cooper & Sheldon, 2002; Karney & Bradbury, 1995; Lavner & Bradbury, 2010; Weidmann, Ledermann, & Grob, 2016). Within this area of research, both core characteristics (i.e., personality traits) and surface characteristics (e.g., self-esteem, attachment styles) of personality have been investigated, speaking to the variety of individual characteristics that are relevant in the romantic realm. Recently, McNulty (2016) described neuroticism, low self-esteem, and insecure attachment (i.e., anxious attachment and avoidant attachment) as those individual characteristics that most consistently act as risk factors or *interpersonal vulnerabilities*¹ for romantic relationships (see also Erol & Orth, 2017; Karney & Bradbury, 1995, 1997; McNulty, 2008; Mikulincer & Shaver, 2003). In the present study, we aim to provide a nuanced understanding of why these interpersonal vulnerabilities are relevant for romantic relationships and how they manifest in a couple's daily life.

Personality–Relationship Transactions in Light of Interpersonal Vulnerabilities

As described in the dynamic transactionism paradigm (Asendorpf & Wilpers, 1998; Magnusson, 1990; Magnusson & Allen, 1983; Neyer & Asendorpf, 2001; Neyer, Mund, Zimmermann, & Wrzus, 2014), personality and romantic relationships are connected to each other through transactional ties; studied as selection effects (i.e., effects of personality on relationships) and socialization effects (i.e., effects of relationships on personality). For all four interpersonal vulnerabilities, personality–relationship transactions have been found: For selection effects, neuroticism, low self-esteem and insecure attachment relate to lower relationship satisfaction of both the target and the partner (Conradi, Noordhof, Dingemans, Barelds, & Kamphuis, 2017; Erol & Orth, 2017; MacGregor, Fitzsimons, & Holmes, 2013; Malouff, Thorsteinsson, Schutte, Bhullar, & Rooke, 2010; Mondor, McDuff, Lussier, & Wright, 2011; Weidmann et al., 2016). For socialization effects, romantic relationships tend to be relevant for later neuroticism, self-esteem, and attachment (Davila, Karney, & Bradbury, 1999; Denissen & Penke, 2008; Luciano & Orth, 2017; Mund, Finn, Hagemeyer, Zimmermann, & Neyer, 2015; Neyer & Asendorpf, 2001; Robins, Caspi, & Moffitt, 2002; Stanton, Campbell, & Pink, 2017). With the goal of “opening the process black box” in social relationships

¹ In the following, we use the term “interpersonal vulnerabilities” based on McNulty (2016, p. 278) when we refer to neuroticism, low self-esteem, anxious attachment, and avoidant attachment as core and surface characteristics that have been found to be related to lower relationship satisfaction.

(Back, 2015, p. 91), an increasingly growing body of research has examined the processes that underlie selection effects and, to a lesser degree, socialization effects in romantic couples (e.g., Campbell, Simpson, Boldry, & Kashy, 2005; Donnellan, Assad, Robins, & Conger, 2007; Finn, Mitte, & Neyer, 2013; Marigold, Holmes, & Ross, 2007; Murray, Holmes, & Griffin, 2000; Overall, Girme, Lemay, & Hammond, 2014; Sadikaj, Moskowitz, & Zuroff, 2015; Vater & Schröder-Abé, 2015).

However, in the pursuit of finding explanatory mediators, there is a lack of research treating selection and socialization effects as a compound, which would fully acknowledge the transactional ties between personality and romantic relationships (for an exception, see Luciano & Orth, 2017), as is a lack in considering multiple aspects of relationship processes (i.e., their daily levels and their day-to-day variability) in their role as mediators. Knowing the relationship processes that occur in a couple's daily life provides meaningful insights into how both partners' personality and their relationship experiences are linked to each other. Yet, relationship processes do not capture the entirety of the daily couple dynamic because, beyond their mere occurrence, processes may also vary from day to day. We maintain that, when studying the daily life of a couple, it is paramount to consider both the occurrence and the variability of processes: Variable emotions, thoughts, and behavior might be experienced as less predictable (Sadikaj, Rappaport, et al., 2015), and might therefore endanger two of the most fundamental needs in relationships—mutual trust and feelings of security and control (Mikulincer & Shaver, 2013; Simpson, 2007).

The importance of variability for romantic relationships has been demonstrated in previous research: Variability in commitment and relationship satisfaction has been linked to relationship instability (Arriaga, 2001; Arriaga, Reed, Goodfriend, & Agnew, 2006), and variability in relationship quality has been associated with increased psychological distress and decreased life satisfaction (Whitton, Rhoades, & Whisman, 2014). Yet, these studies have focused on variability in relationship outcomes (such as relationship satisfaction) rather than on variability in relationship processes. In addition, they have not examined the antecedents of variability. We argue that addressing these limitations allows obtaining a more comprehensive understanding of personality–relationship transactions and their mediating processes. As such, the present study is unique in that it tests both selection and socialization effects in romantic couples and proposes two aspects of processes (i.e., daily level of relationship processes and day-to-day variability) as explanatory mechanisms underlying personality–relationship transactions. As types of processes, we focus on emotions, cognitions, and behaviors that couple members might experience in their daily life.

Interpersonal Vulnerabilities in the Romantic Realm

In the macrocosm of relationship research, neuroticism, low self-esteem, anxious attachment, and avoidant attachment have been revealed as those individual characteristics that constitute a challenge for the romantic couple (McNulty, 2016). In searching for commonalities between these characteristics, one might see the sense of insecurity that underlies each of these vulnerabilities: While neuroticism reflects a general insecurity, such as the tendency to experience negative emotions, irritability, and increased fearfulness (Costa & McCrae, 1987); low self-esteem represents an insecure attitude toward the self and the person's perceived worthiness (Leary & Baumeister, 2000; Rosenberg, 1965); and insecure attachment reflects an insecurity toward the romantic partner's availability and the relationship in general (Hazan & Shaver, 1994). Each of these insecurities likely entails ramifications

for the couple in its daily life. As will be illustrated, we consider people with interpersonal vulnerabilities to experience both lower levels and higher day-to-day variability of beneficial relationship processes; this variability is expected to be due to an inclination to a higher reactivity, vigilance, and insecurity among people with interpersonal vulnerabilities (e.g., Ravary & Baldwin, 2018; Suls & Martin, 2005; Wei, Vogel, Ku, & Zakalik, 2005; Weston & Jackson, 2018).

Neuroticism in a Couple's Everyday Life

Neuroticism, one of the Big Five personality traits, describes the extent to which a person is worried, anxious, and susceptible to negative affect (Costa & McCrae, 1992); attributes that also play out in the daily context of a romantic relationship, such as in the partners' daily emotions, cognitions, and behaviors². With regard to emotions, persons high in neuroticism tend to show their emotions more readily (Lavee & Ben-Ari, 2004), vent their emotions and blame their partner for their own feelings (Vater & Schröder-Abé, 2015). Concerning cognitions, persons high in neuroticism tend to harbor negative attributions about their romantic partner and their relationship (Karney, Bradbury, Fincham, & Sullivan, 1994), interpret ambiguous situations and partner behavior more negatively, and anticipate that an upcoming interaction with their partner will be negative (Finn et al., 2013; McNulty, 2008). In terms of behaviors, individuals high in neuroticism are less likely to intimately disclose their thoughts and feelings to their partner, regardless of how self-disclosing the partner is (Cunningham & Strassberg, 1981). They also tend to show more relational withdrawal behavior (Caughlin & Vangelisti, 2000), to act more negatively toward their partner (Donnellan et al., 2007), and to be less forgiving (Braithwaite, Mitchell, Selby, & Fincham, 2016). From an interpersonal perspective, partners of persons high in neuroticism are apt to display more negative behavior in joint interactions (Donnellan et al., 2007; McNulty, 2008).

Additional to the occurrence of such emotions, cognitions, and behaviors, persons high in neuroticism also experience process variability: Neuroticism has been shown to positively predict variability in emotions, such as mood and affect (Eid & Diener, 1999; Geukes, Nestler, Hutteman, Küfner, & Back, 2017; Hepburn & Eysenck, 1989; Kuppens et al., 2007; Murray, Allen, & Trinder, 2002; Williams, 1981), and to be positively predictive of variability in interpersonal behavior, including in sociability, self-disclosure, and friendliness (Geukes, Nestler, Hutteman, Küfner, et al., 2017). So far, there is limited knowledge about the variability in cognitions. But, given that emotions, cognitions, and behaviors are closely tied (e.g., Schoebi et al., 2012), variability is likely to also be present in the daily cognitions of people high in neuroticism.

Low Self-Esteem in a Couple's Everyday Life

Self-esteem, defined as the subjective evaluation or appraisal of the self (Donnellan, Trzesniewski, & Robins, 2011; Leary & Baumeister, 2000), has a far-reaching impact on the daily life of romantic relationships: In regulating their dependence on their partner (Murray et al., 2000), people with low self-esteem are apt to doubt their partners' positive regard (Murray, Holmes, & Griffin, 1996a, 1996b), which manifests in the cognitions of people with low self-esteem: They are more apt to

² We wish to note that the distinction between cognitions, emotions, and behaviors is warranted for organizational reasons. Within the dynamic of a romantic relationship, cognitions, emotions, and behaviors are closely tied (e.g., Schoebi, Perez, & Bradbury, 2012) and need, hence, be understood as interconnected process chains (Back & Vazire, 2015).

perceive their partner negatively and to perceive that they will experience emotional hurt (Murray et al., 1996a, 1996b, 2000). In terms of emotions and behaviors, people with low self-esteem tend to disclose fewer feelings of affection because they undervalue the beneficial consequences of sharing affection with their partner (Luerssen, Jhita, & Ayduk, 2017); they disclose less personal information to their partner, such as incidences of failure (Cameron, Holmes, & Vorauer, 2009); and they report lower levels of partner caregiving responsiveness, expressed in perceiving their partners to be less accessible, responsive, and engaged (Knapp et al., 2016). From an interpersonal view, partners of targets with low self-esteem tend to be less responsive (Cortes & Wood, 2018); a finding that may explain the target's perception of the partner's low responsiveness.

Speaking to the variability of relationship processes, individuals with low self-esteem tend to experience higher reactivity to negative daily relationship experiences (Neff & Karney, 2009). We are, however, unaware of other evidence of the link between self-esteem and relationship-process variability.

Insecure Attachment in a Couple's Everyday Life

The third interpersonal-vulnerability class that we wish to address is insecure attachment. Attachment in romantic relationships describes the likelihood of individuals seeking closeness to their romantic partner in order to feel secure and safe (Fraley & Shaver, 2000). Whereas some people (i.e., individuals with secure attachment) are comfortable with experiencing emotional closeness, others (i.e., individuals with insecure attachment, such as anxious attachment or avoidant attachment) find it difficult to regulate closeness in their relationships (Brennan, Clark, & Shaver, 1998; Mikulincer & Shaver, 2007)³. Although both anxious attachment and avoidant attachment are subsumed under insecure attachment, they have different implications for individuals and their romantic partners.

Individuals with anxious attachment, on the one hand, tend to hyper-activate their attachment system in times of stress or need (Mikulincer & Shaver, 2007). In terms of emotions, they tend to ascribe more negative relationship-related emotions to their partners than the partners report themselves (Overall, Fletcher, Simpson, & Fillo, 2015). Regarding cognitions, individuals with anxious attachment tend to worry more about being rejected, disapproved of, or unloved during social interactions (e.g., Pietromonaco & Barrett Feldman, 1997; Tidwell, Reis, & Shaver, 1996). They perceive conflict situations in a more negative light, perceive their partners as less responsive (Fraley, Hudson, Heffernan, & Segal, 2015; Shallcross, Howland, Bemis, Simpson, & Frazier, 2011), hold less positive expectations about their relationship partner, and frame their relationship less favorably (Campbell et al., 2005; Mikulincer & Horesh, 1999). In terms of behavior, extant results do not paint a clear picture about the self-disclosing behavior of individuals with anxious attachment: Whereas some research has demonstrated that individuals with anxious attachment are less likely to intimately self-disclose to their partner (Keelan, Dion, & Dion, 1998), other studies have found that individuals with anxious attachment indiscriminately and effusively self-disclose so as to rapidly connect with others and to reduce their fears of rejection (Shaver & Mikulincer, 2006). Partners who receive this

³ Even though attachment has been conceptualized in a categorical fashion (Bartholomew, 1997), recent research has substantiated the dimensional approach as more apt to describe inter-individual differences in adult attachment (Fraley et al., 2015). We therefore adhere to the dimensional approach of adult attachment.

unexpected self-disclosure may be unprepared and therefore react less responsively to the target with anxious attachment (Mikulincer & Nachshon, 1991).

A limited amount of research has been dedicated to examining relationship–process variability among individuals with anxious attachment, with the following exceptions: Individuals with anxious attachment have been found to be more emotionally reactive (Wei et al., 2005), and to be more variable in their relationship perceptions in general (Campbell et al., 2005) and their perceptions of closeness in relationships in particular (Lee & Gillath, 2016). Less is known about the link between anxious attachment and variability in behavioral processes.

Individuals with avoidant attachment, on the other hand, downregulate or even deactivate their attachment system in times of stress or need (Mikulincer & Shaver, 2007). With regard to their emotions, individuals with avoidant attachment tend to show less emotional involvement, to have a reduced ability to identify others' negative emotions, to be less responsive to their partner, and to underestimate the responsiveness of their partner (Mikulincer, Shaver, & Pereg, 2003). In terms of cognitions, individuals with avoidant attachment suppress unwanted distress-related thoughts to preserve their independence and to avoid contemplating abandonment (Mikulincer & Shaver, 2003). Regarding behavior, they prefer independence to dependence and are reluctant to seek emotional intimacy, because they find such intimacy uncomfortable (Collins & Read, 1990; Hazan & Shaver, 1987; Simpson & Rholes, 2012). Individuals with avoidant attachment feel uncomfortable with self-disclosing to their partner (e.g., Bradford, Feeney, & Campbell, 2002; Keelan et al., 1998) and are less likely to self-disclose to and trust their partner (Emery, Gardner, Carswell, & Finkel, 2018). They employ an emotional cut-off strategy by not talking about their emotions, by not turning to their loved ones for support, and by withdrawing from their partner (Feeney & Karantzas, 2017; Wei et al., 2005); they tend to react defensively or withdraw during conflict situations (Feeney & Karantzas, 2017) and report lower levels of positive and constructive communication patterns (Feeney, 1994; Fitzpatrick, Fey, Segrin, & Schiff, 1993).

Similar to the paucity of research findings for relationship–process variability among individuals with anxious attachment, there is a lack of research addressing relationship–process variability among individuals with avoidant attachment. We know of only two studies that have examined avoidant attachment and variability, and these showed that people with avoidant attachment are likely to experience, on a week-to-week basis, higher variability in their felt closeness to important people in their lives (Lee & Gillath, 2016) and to experience higher variability in their partners' commitment (Arriaga et al., 2006).

To summarize, the general consensus arising from previous studies supports the notion that neuroticism, low self-esteem, anxious attachment, and avoidant attachment constitute a challenge for romantic relationships, which is reflected in a couple's daily relationship processes and (partially) in their day-to-day variability. It is plausible that these daily experiences serve as mediators for vulnerability–relationship transactions in romantic couples.

The Present Study

This study provides a fine-grained investigation of the explanatory power of emotional, cognitive, and behavioral relationship processes and their variability in the transactional link between interpersonal vulnerabilities and relationship satisfaction. To that aim, for each domain of relationship processes, we

focused on one specific process with a known relevance for romantic relationships. The emotional process is represented here by *perceived responsiveness*, which captures the subjective feelings of being understood, validated, and cared for by partner (Laurenceau, Feldman Barrett, & Rovine, 2005). The cognitive process we assessed is *positive expectations* about the partner; that is, the degree to which one partner expects that her or his partner will be affectionate, cheerful, and not irritable the next day (Schoebi et al., 2012). The behavioral process we captured is reported *self-disclosure*, defined as the process “of making the self known to other persons” (Jourard & Lasakow, 1958, p. 91) by sharing information, thoughts, and feelings.⁴

Our hypotheses for this study were as follows:

Vulnerability–Relationship Transactions

Hypothesis 1: Interpersonal vulnerabilities (i.e., neuroticism, low self-esteem, anxious attachment, and avoidant attachment) are negatively linked to later relationship satisfaction.

Hypothesis 2: Relationship satisfaction is negatively related to later interpersonal vulnerabilities (i.e., neuroticism, low self-esteem, anxious attachment, and avoidant attachment).

Mediations Underlying Vulnerability–Relationship Transactions

Hypothesis 3: The link between interpersonal vulnerabilities and later relationship satisfaction is mediated through (i) the daily occurrence of less favorable relationship processes (i.e., lower levels of perceived responsiveness, positive expectations, and self-disclosure), and (ii) the day-to-day variability of these relationship processes.

Hypothesis 4: The link between relationship satisfaction and later interpersonal vulnerabilities is mediated through (i) the daily occurrence of less favorable relationship processes (i.e., lower levels of perceived responsiveness, positive expectations, and self-disclosure), and (ii) the day-to-day variability of these relationship processes.

These hypotheses were tested with regard to both level and change in the respective outcomes: We tested whether interpersonal vulnerabilities predicted relationship satisfaction 14 days later, relationship satisfaction 6 months later, and changes in relationship satisfaction across 6 months. Similarly, we tested whether relationship satisfaction predicted interpersonal vulnerabilities 14 days later, interpersonal vulnerabilities 6 months later, and changes in vulnerabilities across 6 months. For all these predictions, we tested whether daily relationship processes and their day-to-day variability mediated the given associations. Due to the interdependence between couple members, we tested for and expected partner (interpersonal) effects in addition to actor (intrapersonal) effects for all the hypothesized links. Partner effects were expected to point in the same direction as actor effects, but to be smaller in size (e.g., Orth, 2013; Weidmann et al., 2016). We expected partner effects given that relationship processes are, by definition, enacted within the couple and are therefore expected to shape both partners' relational well-being and personality.

⁴ We note that all processes can be thought of as a disposition or as an interpersonal process that occurs between two people in their unique dyadic context, as illustrated with self-disclosing to a partner (Dindia, 1994; Laurenceau et al., 1998). In this study, we adopt a combined perspective: perceived responsiveness, positive expectations, and self-disclosure conceptualized as dynamic daily processes, fueled by a person's individual characteristics.

Method

Recruitment and Procedure

Data were taken from the longitudinal study *Processes in Romantic Relationships and Their Impact on Relationship and Personal Outcomes (CouPers)*. The CouPers study received ethical approval from the institutional review board [blinded] (approval number: 003–16–1) at the University of [blinded] and followed a large age-heterogeneous convenience sample of German-speaking romantic couples⁵ living in Austria, Germany, or Switzerland.

Couples were recruited via the following channels: First, we recruited couples by announcing the study in university classes and posting it on bulletin boards at several German and Swiss universities, giving interviews about the study to Swiss media, and distributing flyers at public locations and events in Switzerland. Further, the project was mentioned in German and Swiss newspapers. Finally, approximately half of the sample was recruited by advertisements on Facebook that were targeted to adults aged between 18 and 80 that resided in Austria, Germany, or Switzerland, and indicated that they were in a romantic relationship.⁶

The CouPers study comprised four waves over a period of 2 years, which were 4 to 6 months⁷ apart from each other. For the present study, we used data from waves 1 and 2. The study design was as follows (see also Figure 1): On the first day of wave 1, participants completed questionnaires on neuroticism, self-esteem, attachment, and relationship satisfaction, as well as on other topics that are not in the focus of the current study; this measurement occasion reflects Time 1 (T1). Following T1, couple members participated in a diary study for 14 consecutive days, which is referred to as the testing interval for assessing relationship processes (T_{Proc}). Every day during this interval, couple members reported on perceived responsiveness (emotional process), positive expectations (cognitive process), and self-disclosure (behavioral process). To assess these processes, participants received a link every day at 4 pm Central European Time. On the last day of wave 1, we asked participants to again report on neuroticism, self-esteem, attachment, and relationship satisfaction (amongst other things, which are not in the scope of the present study); this measurement occasion depicts Time 2 (T2). In wave 2, 4 to 6 months later, we re-assessed neuroticism, self-esteem, attachment on the first

⁵ Although not in the scope of the present study, please note that participants were allowed to remain in the CouPers study if they separated from their partner, if they entered a new relationship, or if their partner withdrew from the study.

⁶ Of the 1,208 participants whose data were used for the current study, 501 participants were recruited through Facebook (i.e., Facebook sample), 464 participants through other channels (i.e., non-Facebook sample), while for the remaining 243 participants, we do not have data about their recruitment channels. Compared to the non-Facebook sample, participants from the Facebook sample yielded significant differences in terms of age, relationship duration, income, marital status, and parenthood. More specifically, the participants from the Facebook sample were significantly younger ($M = 28.29$ vs. $M = 37.76$ years, $t[790] = 8.69$, $p < .001$, $d = .57$), reported shorter relationship durations ($M = 7.03$ years vs. $M = 12.19$ years, $t[729] = 7.03$, $p < .001$, $d = .43$), and had a significantly lower income than the participants from the non-Facebook sample ($p < .001$). The Facebook and the non-Facebook sample also differed in their marital status ($\chi^2 [5] = 20.12$, $p < .001$) in that participants from the Facebook sample were more likely to be unmarried (33.37% vs. 26.46%). Finally, participants from the Facebook-sample were less likely to have children (12.12 % vs. 18.13 %, $\chi^2 [1] = 22.87$, $p < .001$).

day, and relationship satisfaction on the last day of a 14-day interval; this follow-up measurement occasion reflects Time 3 (T3).

Participants received cinema or shopping vouchers to a value of CHF 20 (approximately USD 20) as compensation, if they responded to at least seven daily diary reports and to the questionnaires before and after the testing interval. Their compensation was not linked to their partner's participation. All participants had the option to receive personalized feedback after the completion of the wave; this feedback was (a) optional, (b) based on their own responses, and (c) referred to one personality scale that was chosen beforehand by the research group.

Sample

From an initial $N = 2,334$ individuals, who participated in T1, we focused on a subsample of participants, who (1) completed T1, T2, and T3, as a couple; (2) responded to at least two daily reports in the testing interval (necessary to model relationship-process variability); and (3) were in a female-male relationship (necessary to model the structural equation approach; exclusion of the data of $N = 24$ same-gender couples). For the relationship-process data, we discarded repeated completions on the same day and retained only data provided between 4:00 p.m. and 4:00 a.m. This sampling strategy resulted in a final sample of 604 couples (i.e., 1,208 couple members).

The couple members' ages ranged between 18 and 81 ($M = 32.88$; $SD = 13.87$) years, and their relationship durations were between 2.5 months and 52.08 years ($M = 8.79$ years; $SD = 10.69$ years). More than half of the couples were unmarried (59.8%); 35.8% were married, 3.1% were divorced, 0.2% were separated, 0.4% were widowed, and 0.7% reported a registered partnership. Almost a third of the participants had children (28.6%). Further, 71.4% lived with their partner (or with their partner and children), 9.5% with their parent(s) (and sibling[s]), 9.4% lived alone, 8.2% lived in a shared apartment, 0.3% lived with their children (but not with their partner), and 1.2% reported different living arrangements. Participants were living in Austria (11.3%), Germany (62.8%), Switzerland (25.6%), and other countries (0.2%).

Measures

Interpersonal vulnerabilities.

Neuroticism. Neuroticism was assessed with the Big Five Inventory (John & Srivastava, 1999) in its German version (Lang, Lüdtke, & Asendorpf, 2001) using the 8 items to assess neuroticism. For each item, participants rated the extent to which they agreed with statements ascribed to themselves (e.g., "I see myself as someone who worries a lot."). Items were rated on a 5-point Likert scale with response options from 1 (*strongly disagree*) to 5 (*strongly agree*). The omega reliabilities⁷ for the neuroticism measures ranged between .84 – .86 (depending on the measurement occasion under consideration).

Low self-esteem. Self-esteem was assessed with the Rosenberg Self-Esteem Scale (Rosenberg, 1965) in its German version (von Collani & Herzberg, 2003). Participants rated ten items (e.g., "On the whole, I am satisfied with myself.") on a 5-point Likert scale, ranging from 1 (*not at all*) to

⁷ Due to possible correlated measurement errors or unequal factor loadings, omega reliabilities are considered the appropriate reliability measure to use in the context of latent factor analyses (Dunn, Baguley, & Brunnsden, 2014; Zinbarg, Yovel, Revelle, & McDonald, 2006).

5 (*absolutely*). We recoded the self-esteem items so that higher ratings indicated lower self-esteem to more easily interpret self-esteem as a vulnerability characteristic (comparable to neuroticism and insecure attachment). The omega reliabilities for this scale ranged between .90 – .92.

Insecure attachment. Attachment was measured with the Experiences in Close Relationships–Relationship Structures Questionnaire (Fraley, Heffernan, Vicary, & Brumbaugh, 2011) in its German version (Ehrental, Dinger, Lamla, Funken, & Schauenburg, 2009). Participants were asked about their experiences in romantic relationships and provided answers on a 5-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The three items measuring anxious attachment (e.g., “I’m afraid my partner may abandon me”) had omega reliabilities between .74 – .78, and the six items assessing avoidant attachment (e.g., “I don’t feel comfortable opening up to my partner”) had omega reliabilities between .73 – .77.

Relationship Processes.

Perceived responsiveness. On a daily basis, participants rated how responsive they perceived their partner to be using four items with a 5-point Likert scale, ranging from 1 (*very little*) to 5 (*a great deal*) (Laurenceau et al., 2005). Items captured the degree to which the person felt (1) understood, (2) validated, (3) accepted, and (4) cared for by the partner. The omega reliability across 14 days was .95.

Positive expectations. On a daily basis, participants reported their daily expectations about their partner. Items began “Tomorrow, I expect my partner to be...” and ended with the items “affectionate”, “cheerful”, and “irritable” (Schoebi et al., 2012). Items were rated on a 5-point Likert scale with response options from 1 (*not at all*) to 5 (*very much*). The item “irritable” was recoded, so that higher ratings implied lower expectations of partner irritability. The omega reliability across 14 days was .81.

Self-disclosure. On a daily basis, participants rated the following three items regarding their self-disclosing behavior: “Today, I have disclosed facts and information to my partner”, “Today, I have disclosed my thoughts to my partner”, and “Today, I have disclosed my feelings to my partner” (Laurenceau et al., 2005). Items were rated on a 5-point Likert scale, ranging from 1 (*very little*) to 5 (*a great deal*). The omega reliability across 14 days was .91.

Relationship outcome.

Relationship satisfaction. Relationship satisfaction was assessed with the Relationship Assessment Scale (Hendrick, 1988) in its German version (Sander & Böcker, 1993). Participants rated seven items (e.g., “How well does your partner meet your needs?”) on a 5-point Likert scale with higher values indicating higher relationship satisfaction. Omega reliabilities were between .86 – .88.

Data–Analytical Approach

To conduct our analyses, we used the lavaan package (Rosseel, 2012) in R (R Development Core Team, 2016) (the R–script is provided on the Open Science Framework, accessible through the following link: <https://osf.io/hxka2/>). All models were computed for each of the interpersonal vulnerabilities separately. To take the couples’ different relationship durations into account, we controlled for relationship duration in each model (for bivariate correlations between relationship duration and the study’s key variables, see Table 2). We analyzed the data in a two-step manner: For

Hypotheses 1 and 2, we used latent Actor–Partner Interdependence Models (APIMs; Kenny & Cook, 1999; Kenny, Kashy, & Cook, 2006); for Hypotheses 3 and 4, we used Actor–Partner Interdependence Mediation Models (APIMeMs; Ledermann, Macho, & Kenny, 2011). In all models, actor and partner effects were set equal across couple members without worsening the model fit. To model the latent factors, we used the item-to-construct balance parceling method (Little, Cunningham, Shahar, & Widaman, 2002): Three parcels were formed per latent factor for neuroticism, low self-esteem, avoidant attachment, and relationship satisfaction; both partners' corresponding parcel error terms were then covaried. Given that anxious attachment was measured with only three items, these three items were used as indicator variables of the latent anxious attachment factor.

Testing a large number of models increases the Type 1 error rate, which leads us to only interpret results on a $p < 0.01$ level and to report 99% confidence intervals (for a similar approach, see Mund & Neyer, 2014; Parker, Lüdtke, Trautwein, & Roberts, 2012). Below, we describe the models in more detail.

APIMs. For Hypothesis 1, we tested the actor and partner effects of interpersonal vulnerabilities on later relationship satisfaction. These effects were examined in the prediction of (1) short-term levels, (2) long-term levels, and (3) change. That is, actor and partner effects of interpersonal vulnerabilities from T1 on (1) relationship satisfaction at T2 (14 days later); (2) relationship satisfaction at T3 (6 months later); and (3) change in relationship satisfaction between T2 and T3 (latent change score across 6 months; see Figure 2 for an example model).

For Hypothesis 2, to examine the transactional effects, we tested actor and partner effects of relationship satisfaction from T1 on later interpersonal vulnerabilities. These effects were, again, tested with regard to (1) short-term levels (i.e., interpersonal vulnerabilities at T2; 14 days later); (2) long-term levels (i.e., interpersonal vulnerabilities at T3; 6 months later); and (3) change (i.e., change in the interpersonal vulnerabilities between T2 and T3; latent change score across 6 months).

APIMeMs. For Hypotheses 3 and 4, daily relationship processes and their day-to-day variability were used as mediators of the above described actor and partner effects (see Figure 3 for an example model). To operationalize each relationship process and its variability, we created two latent factors per process per couple member. The first factor represented the mean of the respective relationship process averaging the scale's items across T_{Proc} (e.g., the mean of each responsiveness item across the testing interval was used as an indicator variable for the responsiveness factor). The second factor represented the variability of the respective relationship process; the standard deviations of each item across the testing interval were used as indicator variables (Gerstorf, Siedlecki, Tucker-Drob, & Salthouse, 2009). The error terms of the same indicator variables were allowed to covary across partners. To test for significant indirect effects, we used bias-corrected bootstrapping with 5,000 samples to estimate confidence intervals.

Model fit. Goodness-of-fit of the models was examined with the following fit indices: The comparative fit index (CFI), the root-mean-square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). The model is considered to fit the data well if CFI is above .97, and RMSEA and SRMR are below .05. Acceptable fit is indicated by a CFI is above .95,

RMSEA is below .08, and SRMR is below .10 (Schermelleh-Engel, Moosbrugger, & Müller, 2003). Fit indices of all models are presented in the Supplemental Material Tables S1 – S4.⁸

Measurement invariance. In the change models, relationships satisfaction at T2 and T3 were entered simultaneously (Hypothesis 3) as were interpersonal vulnerabilities at T2 and T3 (Hypothesis 4). Hence, we tested these variables' measurement invariance across couple members and across time (see Supplemental Material Tables S5 and S6). We found at least metric invariance for neuroticism, self-esteem, avoidant attachment, and relationship satisfaction. Depending on the respective result for the measurement invariance, we constrained the loadings to be invariant across couple members, across time, or across both couple members and time in the corresponding latent change score model. In doing so, we fixed the first loading of each latent factor at the value of 1.

Results

Descriptive Statistics and Correlations

Descriptive statistics of the study's main variables for female and male partners are shown in Table 1. Women, compared to men, were significantly higher in neuroticism, significantly lower in self-esteem, and significantly lower in avoidant attachment at all measurement occasions. Women also had significantly higher values than men in anxious attachment at T1. While the sex differences in neuroticism were moderate in size, the sex differences in self-esteem, anxious attachment, and avoidant attachment represented small effects. Further, women, compared to men, reported significantly higher relationship satisfaction at T2 and T3, and had significantly higher levels of the investigated relationship processes at all measurement occasions. Finally, women indicated significantly higher variability in perceived responsiveness and self-disclosure. Sex differences in relationship satisfaction, relationship processes, and relationship–process variability represented small effects.

Bivariate correlations of all study variables for female and male partners are presented in Table 2. For both couple members, neuroticism, low self-esteem, and anxious attachment correlated positively with each other at all three measurement occasions, revealing moderate to high effects⁹;

⁸ We computed 24 APIMs and 72 APIMeMs. Of these 96 models tested, we found that in 26 models the CFI was below the acceptable threshold, with a lowest value of .923. However, in only three of these 26 cases either RMSEA or SRMR also showed a non-acceptable fit. Hence, for 93 of 96 models tested, two fit indices were at least acceptable or good.

⁹ Given the moderate to high correlations among interpersonal vulnerabilities, we tested whether they could be subsumed into a unified insecurity factor. To that aim, we performed a confirmatory factor analysis (Davies, Macfarlane, McBeth, Morriss, & Dickens, 2009) with both couple members' vulnerabilities at T2 and T3 loading onto two insecurity factors per measurement occasion per partner. These measurement occasions were chosen because the respective change model would also include both time points' insecurity factors to create a change factor. The CFA is presented in Supplemental Material Figure S3. The error terms in the corresponding indicator variables were correlated between couple members (e.g., X11 and X51). Further, within couple members, error terms of the same indicator variable over time were also correlated. The results of the CFA are shown in Supplemental Material Table S21. For both measurement occasions, loadings for neuroticism and low self-esteem varied between .84 and .89 across couple members. For anxious attachment, they varied between .56 and .62, whereas for avoidant attachment, the loadings were lower, with loadings between .37 and .47. Goodness-of-fit indices of the confirmatory factor analysis demonstrated that two of the model fit indices were not acceptable (CFI = .857, RMSEA = .067, SRMR = .120). In addition, the loadings of the vulnerabilities on the insecurity factors were not balanced in their size, which

fewer effects emerged for correlations between neuroticism and avoidant attachment. Interpersonal vulnerabilities and relationship satisfaction correlated negatively with each other for both couple members at all three measurement occasions. Relationship processes were negatively correlated with interpersonal vulnerabilities and positively correlated with relationship satisfaction for both male and female couple members at all three occasions. An exception was self-disclosure: For female partners, we found non-significant correlations between self-disclosure and neuroticism at T1; for male partners, we found non-significant correlations between self-disclosure and neuroticism at all measurement occasions and between self-disclosure and self-esteem at T1.

Variability of relationship processes was negatively linked to relationship satisfaction at all three measurement occasions for both male and female partners. Further, for female partners, variability of perceived responsiveness was positively linked to neuroticism, anxious attachment, and avoidant attachment at all three measurement occasions and to self-esteem at T3; variability of positive expectations was positively linked to all interpersonal vulnerabilities at each measurement occasion; and variability of self-disclosure was positively linked to neuroticism at T3. For male partners, variability of perceived responsiveness was linked to neuroticism, self-esteem, anxious attachment, and avoidant attachment at all three measurement occasions; variability of positive expectations was positively linked to low self-esteem at T2 and T3 and to both insecure attachment styles at all measurement occasions; variability of self-disclosure was positively linked to avoidant attachment at T1 and T3.

Relationship duration was linked to several study variables. For female partners, relationship duration was negatively correlated with neuroticism, low self-esteem, anxious attachment, and relationship satisfaction at all three measurement occasions; it was unrelated to avoidant attachment at any measurement occasion (all $ps > .01$). Relationship duration was also negatively linked to perceived responsiveness, positive expectations, and self-disclosure as well as to the variability of expectations and of self-disclosure in women. For male partners, relationship duration was negatively correlated with low self-esteem and anxious attachment at T1. It was not related to other interpersonal vulnerabilities, to relationship satisfaction, or to the level of relationship processes (all $ps > .01$). Yet, relationship duration was negatively linked to the variability of perceived responsiveness and positive expectations in men.

Finally, referring to the correlations between couple members, neuroticism was negatively correlated between couple members at all measurement occasions; self-esteem was positively correlated at T2 and T3; both insecure attachment styles were positively correlated at all measurement occasions, as were relationship satisfaction, relationship processes, and relationship-process variability.

speaks to the greater importance of neuroticism and low self-esteem compared to anxious attachment as well as avoidant attachment. We therefore refrained from testing structural equation models incorporating neuroticism, low self-esteem, anxious attachment, and avoidant attachment as a unified insecurity factor. This leads us to conclude that—although neuroticism, low self-esteem, and insecure attachment might share a common sense of insecurity—, their insecurity is differently embedded for each vulnerability: Hence, all these insecurities might play out differently in the romantic realm and need to be considered as their own single insecurity factors in the daily life of a couple.

Results of Latent Actor-Partner Interdependence Models

Hypothesis 1: Interpersonal vulnerabilities predicting later relationship satisfaction.

Table 3 shows the results of the latent APIMs with interpersonal vulnerabilities at T1 predicting relationship satisfaction at T2, T3, and change in relationship satisfaction. As shown in the upper section of this table, both partners' neuroticism, low self-esteem, anxious attachment, and avoidant attachment intra- and interpersonally predicted lower levels of relationship satisfaction 14 days later (T2) and 6 months later¹⁰ (T3). The effect sizes for the actor effects ranged from small to large, with small effects for neuroticism and low self-esteem, medium effects for anxious attachment, and large effects for avoidant attachment. Partner effects were small to medium in size, with neuroticism, low self-esteem, and avoidant attachment showing small effects and anxious attachment showing medium effects. Regarding the prediction of change in relationship satisfaction (lower section of Table 3), no significant actor effects emerged (all $ps > .01$). On a partner-effect level, avoidant attachment predicted later change in relationship satisfaction, signifying that partner avoidant attachment was predictive of decreases in targets' relationship satisfaction across 6 months. No other partner effects were significant (all $ps > .01$).

To summarize the results concerning Hypothesis 1, both partners' interpersonal vulnerabilities predicted relationship satisfaction 14 days and 6 months later. However, interpersonal vulnerabilities did not predict change in relationship satisfaction with the exception of partner's avoidant attachment predicting decreases in the target's relationship satisfaction.

Hypothesis 2: Relationship satisfaction predicting later interpersonal vulnerabilities.

Table 4 shows the results of the latent APIMs with relationship satisfaction at T1 predicting interpersonal vulnerabilities at T2, T3, and change in these vulnerabilities. As presented in the upper section of this table, significant negative actor effects emerged for the prediction of all four interpersonal vulnerabilities 14 days later (T2) and 6 months later (T3). The effect sizes ranged from small effects in the prediction of neuroticism at T2 and T3, of low self-esteem at T2 and T3, and of anxious attachment at T3; to moderate effects in the prediction of anxious attachment at T2; and large effects in the prediction of avoidant attachment at T2 and T3. Significant negative partner effects emerged for the prediction of anxious attachment at T2 and T3, indicating that higher relationship satisfaction of the partner predicted lower levels of anxious attachment in the target person 14 days and 6 months later; these effects were small. Relationship satisfaction was not predictive of change in interpersonal vulnerabilities (all $ps > .01$; see lower section of Table 4).

To summarize the findings concerning Hypothesis 2, relationship satisfaction yielded significant actor effects on the levels of interpersonal vulnerabilities 14 days and 6 months later, and a significant partner effect on the level of anxious attachment 14 days and 6 months later. Change in interpersonal vulnerabilities, however, was not predicted by previous relationship satisfaction.

Results of Actor-Partner Interdependence Mediation Models

Next, we tested Hypotheses 3 and 4 to reveal the role of relationship processes and their variability in the transactional link between interpersonal vulnerabilities and relationship satisfaction.

¹⁰ Please note that 6 months refers to a time interval of four to six months (see study design; Figure 1).

Hypothesis 3: Relationship processes and their variability in the link between interpersonal vulnerabilities and later relationship satisfaction. Before testing the mediational role of relationship processes and relationship–process variability, we refer to the direct links of relationship processes with later relationship satisfaction. Across all models tested, relationship processes revealed significant positive actor effects on relationship satisfaction at T2 and T3, and, partially, positive partner effects on satisfaction at T2 and T3 (see for more details, Tables 5, 7, 9, 11). In other words, higher levels of daily perceived responsiveness, positive expectations, and self-disclosure were linked to higher levels of the individual's own relationship satisfaction and, partially, to higher levels of the partner's relationship satisfaction. For perceived responsiveness, we also found a negative partner effect on change in relationship satisfaction, signifying that the partner's higher levels of perceived responsiveness were linked to decreases in the target's relationship satisfaction across 6 months; this effect, however, only emerged in the model with avoidant attachment as predictor.

Regarding the role of relationship–process variability for relationship satisfaction, we found fewer effects (see for more details, Tables 13, 14, 15, and 16), and we even found one effect that was against our prediction: Variability in responsiveness exhibited a significant positive actor effect on relationship satisfaction at T2. That is, people who reported higher day-to-day variability in how responsive they perceived their partner were more satisfied after the 2-week testing interval. No other effects were found between relationship–process variability and later relationship satisfaction (all $ps > .01$).

We now turn our attention to whether these processes and their variability explained the link between interpersonal vulnerabilities and later relationship satisfaction. For each interpersonal vulnerability, we present the findings for relationship processes and relationship–process variability separately. For all models, we first present the direct effects between the interpersonal vulnerability and the process variable and then the indirect effects.

The mediational role of relationship processes.

Neuroticism. Regarding the direct effects of neuroticism on relationship processes (Table 5), most consistently, neuroticism exhibited significant negative actor and partner effects on daily perceived responsiveness and positive expectations. That is, individuals high in neuroticism and their partners reported lower levels of daily perceived responsiveness and positive expectations in the 2-week testing interval. Addressing the mediating role of these processes (Table 6), significant actor-actor and partner-actor indirect effects emerged for both processes in the link between neuroticism and relationship satisfaction at T2 and T3. In other words, the lower levels of perceived responsiveness and positive expectations that individuals high in neuroticism and their partners experienced explained their lower levels of relationship satisfaction at the end of the 2-week period and after 6 months. In addition, significant actor-partner and partner-partner indirect effects were found for responsiveness in the link between neuroticism and relationship satisfaction at T2, signifying that actor and partner perceived responsiveness mediated the partner effects between neuroticism and relationship satisfaction at the end of the 2-week period. No significant mediational effects were found for self-disclosure; neither were any significant mediational effects observed for predicting change in relationship satisfaction between T2 and T3 (all $ps > .01$).

Low self-esteem. For low self-esteem and its direct effects on relationship processes (Table 7), we found significant negative actor and partner effects on perceived responsiveness, positive expectations, and self-disclosure. That is, individuals with low self-esteem and their partners reported lower levels of perceived responsiveness, positive expectations, and self-disclosure across the 2-week interval. Addressing the mediational role of these processes (Table 8), we found significant actor-actor and partner-actor effects for all relationship processes in the prediction of relationship satisfaction at T2 and T3. The lower levels of daily perceived responsiveness, positive expectations, and self-disclosure explained the link between both partners' low self-esteem and the target person's lower levels of relationship satisfaction 14 days and 6 months later. In addition, significant actor-partner effects were observed for perceived responsiveness and self-disclosure, signifying that lower levels of daily perceived responsiveness and self-disclosure of individuals with low self-esteem explained their partners' lower relationship satisfaction after the 2-week interval. We did not observe mediational effects for changes in relationship satisfaction (all $ps > .01$).

Anxious attachment. Turning our attention to anxious attachment and its direct link to relationship processes (Table 9), we found significant negative actor and partner effects of anxious attachment on all relationship processes. That is, similar to findings for self-esteem, people with anxious attachment and their partners reported lower levels of daily perceived responsiveness, positive expectations, and self-disclosure across the 2 weeks. Speaking to the mediational role of these relationship processes (Table 10), significant actor-actor and partner-actor effects were observed for all three relationship processes in the prediction of relationship satisfaction at T2 and T3. In other words, the lower levels of daily perceived responsiveness, positive expectations, and self-disclosure that individuals with anxious attachment and their partners reported explained the target's lower levels of relationship satisfaction 14 days and 6 months later. Again, we did not observe mediational effects for changes in relationship satisfaction (all $ps > .01$).

Avoidant attachment. Addressing the final interpersonal vulnerability assessed in this study and its direct link to relationship processes (Table 11), we observed significant negative actor and partner effects of avoidant attachment on all relationship processes. In other words, individuals with avoidant attachment, as well as their partners, reported lower levels of daily perceived responsiveness, positive expectations, and self-disclosure in the 2-week testing interval. Considering the mediational role of these relationship processes (Table 12), we observed significant actor-actor effects for all three relationship processes in the prediction of relationship satisfaction at T2 and T3. That is, the lower levels of perceived responsiveness, positive expectations, and self-disclosure of individuals with avoidant attachment explained their lower levels of relationship satisfaction 14 days and 6 months later. Furthermore, significant partner-actor indirect effects emerged for perceived responsiveness and expectations in the prediction of relationship satisfaction at T2 and T3. In other words, partners of individuals with avoidant attachment reported lower levels of daily perceived responsiveness and positive expectations, which explained the target's lower levels of relationship satisfaction 14 days and 6 months later. Finally, a significant actor-partner indirect effect emerged in the prediction of change in relationship satisfaction. That is, the lower levels of perceived responsiveness reported by individuals with avoidant attachment explained the decreases in their partners' relationship satisfaction across 6 months.

The mediational role of relationship–process variability.

Neuroticism. Speaking to the direct effects between neuroticism and relationship–process variability (Table 13), neuroticism, most consistently, exhibited significant actor effects on variability in perceived responsiveness and significant partner effects on variability in perceived responsiveness and expectations. In other words, individuals high in neuroticism were more variable in their perception of partner responsiveness, and partners of individuals high in neuroticism were more variable in how responsive they perceived the target person and in their expectations about the target person. With respect to the mediational role of this relationship–process variability, we found a significant actor–actor effect for variability in perceived responsiveness ($\beta = .02$, $b = .01$, $p < .01$, 99% CI [.001, .02]; see Supplemental Material Table S7): Individuals high in neuroticism were more variable in how responsive they perceived their partner, which explained their own higher levels of relationship satisfaction 14 days later. No other indirect effect was significant (all $ps > .01$).

Low self-esteem. Considering low self-esteem in the realm of relationship–process variability (see Table 14), low self-esteem had a significant partner effect on the variability of expectations. That is, partners of individuals with low self-esteem experienced were more variable in their day-to-day expectations about the target person. However, we did not find that relationship–process variability mediated the link between low self-esteem and later relationship satisfaction (all $ps > .01$; see Supplemental Material Table S8).

Anxious attachment. With regard to anxious attachment in the context of relationship–process variability (Table 15), we observed, most consistently, significant positive actor effects of anxious attachment on variability in perceived responsiveness and positive expectations, as well as significant positive partner effects on variability in positive expectations. That is, individuals with anxious attachment were more variable in how responsive they perceived their partner and in how positive they expected their partner to be; partners of these individuals were, in turn, more variable in how responsive they perceived the target person. However, we did not find that relationship–process variability mediated the link between anxious attachment and later relationship satisfaction (all $ps > .01$; see Supplemental Material Table S9).

Avoidant attachment. Speaking to avoidant attachment in the realm of relationship–process variability (Table 16), we found significant actor effects of avoidant attachment on variability in all relationship processes and significant partner effects on variability in perceived responsiveness. In other words, individuals with avoidant attachment were more variable in their day-to-day perceived responsiveness, positive expectations, and self-disclosure; and partners of individuals with avoidant attachment experienced were more variable in perceived responsiveness. We did not find that relationship–process variability mediated the link between avoidant attachment and later relationship satisfaction (all $ps > .01$; see Supplemental Material Table S10).

Interim summary. To summarize the findings for Hypothesis 3, relationship processes served as a mediator in the link between (1) both partners' neuroticism and later relationship satisfaction (perceived responsiveness and positive expectations served as mediators); (2) both partners' low self-esteem and later relationship satisfaction (perceived responsiveness, positive expectations, and self-disclosure served as mediators); (3) both partners' anxious attachment and later relationship satisfaction (perceived responsiveness, positive expectations, and self-disclosure served as

mediators); (4) both partners' avoidant attachment and later relationship satisfaction (perceived responsiveness and positive expectations served as mediators); (5) the target person's avoidant attachment and his/her later relationship satisfaction (self-disclosure served as mediator); and (6), finally, the target person's avoidant attachment and decreases in the partner's relationship satisfaction (perceived responsiveness served as mediator). Variability in relationship processes served as mediator in only one link: Variability in perceived responsiveness explained the association between the target's neuroticism and his/her relationship satisfaction 14 days later.

Hypothesis 4: Relationship processes and their variability in the link between relationship satisfaction and later interpersonal vulnerabilities. As a final step of the analyses, we tested whether relationship processes and their variability mediated the reversed link, that is, the link between relationship satisfaction and later interpersonal vulnerabilities. Before elaborating the mediational role of relationship processes and relationships-process variability, we report the direct links between relationship satisfaction and both process variables. Across all models tested, relationship satisfaction exhibited positive actor effects on relationship processes (see Supplemental Material Tables S11, S15, S19, S23), signifying that individuals who were more satisfied in their relationship reported higher levels of perceived responsiveness, positive expectations, and self-disclosure in the following 2-week study interval. In addition, in all models, relationship satisfaction had a negative effect on the target's variability in perceived responsiveness, expectations, and self-disclosure, and on the partner's variability in perceived responsiveness (see Supplemental Material Tables S13, S17, S21, S25). In other words, individuals with lower relationship satisfaction were more variable in all relationship-process categories and their partners were more variable in how responsive they perceived the target person. Next, we tested whether these processes and their variability explained the link between relationship satisfaction and later interpersonal vulnerabilities.

The mediational role of relationship processes and relationship-process variability.

Neuroticism. With neuroticism as the outcome variable, we found no significant mediation (all $ps > .01$; see Supplemental Material Table S12). However, we observed that relationship-process variability served as a significant mediator. More specifically, we found an actor-partner indirect effect for variability in expectations ($\beta = -.05$, $b = -.08$, $p < .01$, 99% CI [-.14, -.02]; see Supplemental Material Table S14). In other words, the target person's lower relationship satisfaction was linked to higher variability in his/her expectations about the partner, which explained the partner's higher levels of neuroticism 14 days later. We did not observe any other mediations of relationship-process variability in this link (all $ps > .01$).

Low self-esteem. With low self-esteem as the outcome variable, we found perceived partner responsiveness to serve as a significant mediator (see Supplemental Material Table S16). More specifically, we found a negative actor-actor indirect effect for the association between relationship satisfaction and low self-esteem at T2 ($\beta = -.10$, $b = -.11$, $p < .01$, 99% CI [-.20, -.03]) and another negative actor-actor indirect effect for the association between relationship satisfaction and low self-esteem at T3 ($\beta = -.09$, $b = -.10$, $p < .01$, 99% CI [-.18, -.01]). Put differently, individuals with lower relationship satisfaction reported lower levels of daily responsiveness, which explained their own lower levels of self-esteem 14 days and 6 months later. We found no other significant indirect effects for

relationship processes (all $ps > .01$), just as we did not find any significant indirect effects for relationship–process variability in this link (all $ps > .01$; see Supplemental Material Table S18).

Anxious attachment. With anxious attachment as the outcome variable, we found three significant actor-actor indirect effects (see Supplemental Material Table S20): Perceived responsiveness mediated the actor effect between relationship satisfaction and levels of anxious attachment at T2 ($\beta = -.15$, $b = -.28$, $p < .01$, 99% CI [-.43, -.13]) as well as the actor effect between relationship satisfaction and levels of anxious attachment at T3 ($\beta = -.09$, $b = -.16$, $p < .01$, 99% CI [-.29, -.03]). That is, individuals with lower relationship satisfaction reported lower levels of daily responsiveness, which explained their own higher levels of anxious attachment 14 days and 6 months later. Finally, expectations mediated the actor effect between relationship satisfaction and anxious attachment at T2 ($\beta = -.08$, $b = -.14$, $p < .01$, 99% CI [-.26, -.02]): Individuals with lower relationship satisfaction reported lower levels of daily positive expectations, which explained their own higher levels of anxious attachment 14 days later. We found no other significant indirect effect for relationship processes (all $ps > .01$), just as we did not find any significant indirect effects for relationship–process variability in this link (all $ps > .01$; see Supplemental Material Table 22).

Avoidant attachment. With avoidant attachment as the outcome variable, we observed five significant actor-actor indirect effects (see Supplemental Material Table S24): Perceived responsiveness ($\beta = -.18$, $b = -.23$, $p < .01$, 99% CI [-.33, -.13]), positive expectations ($\beta = -.10$, $b = -.13$, $p < .01$, 99% CI [-.22, -.04]), and self-disclosure ($\beta = -.08$, $b = -.10$, $p < .01$, 99% CI [-.15, -.05]) mediated the link between relationship satisfaction and avoidant attachment at T2. That is, individuals with lower relationship satisfaction experienced lower levels of daily responsiveness, positive expectations, and self-disclosure, which explained their own higher levels of avoidant attachment 14 days later. Furthermore, responsiveness ($\beta = -.16$, $b = -.23$, $p < .01$, 99% CI [-.34, -.13]) and expectations ($\beta = -.07$, $b = -.10$, $p < .01$, 99% CI [-.20, -.01]) mediated the link between relationship satisfaction and avoidant attachment at T3. We found no other significant indirect effects for relationship processes (all $ps > .01$), just as we did not find any significant indirect effects of relationship–process variability in this link (all $ps > .01$; see Supplemental Material Table S26).

Interim summary. To summarize the findings for Hypothesis 4, we found significant intrapersonal mediational effects of relationship processes in the link between relationship satisfaction and (1) later self-esteem (perceived responsiveness served as mediator), (2) later anxious attachment (perceived responsiveness and positive expectations served as mediator), and (3) later avoidant attachment (all relationship processes served as mediators). While we found no mediational effects of relationship processes on later neuroticism, neuroticism was the only interpersonal vulnerability that was mediated by relationship–process variability: Higher variability in positive expectations mediated the link between the target's lower relationship satisfaction and the partner's higher levels of neuroticism 14 days later.

Discussion

Research on the role of romantic partners' personality for their romantic relationships has consistently shown that interpersonal vulnerabilities (i.e., neuroticism, low self-esteem, anxious attachment, and avoidant attachment) are related to lower relationship satisfaction (e.g., McNulty, 2016). To further understand how these vulnerabilities contribute to later (dis-)satisfaction and how (dis-)satisfaction, in

turn, contributes to later vulnerabilities, the present study zoomed into the daily life of a couple: Daily relationship processes and their day-to-day variability were tested as mediators in the transactional links between interpersonal vulnerabilities and relationship satisfaction in romantic couples.

Vulnerability–Relationship Transactions

Selection effects. Speaking to the selection effects in vulnerability–relationship transactions, our results support previous research (Erol & Orth, 2017; Karney & Bradbury, 1995; Li & Chan, 2012; Weidmann et al., 2016) inasmuch as neuroticism, low self-esteem, anxious attachment, and avoidant attachment were consistently linked to lower levels of later relationship satisfaction in the target and the partner. We found the strongest effects for avoidant attachment, which emphasizes the prominent role of this interpersonal vulnerability for relational well-being; a finding that is further supported by a comprehensive meta-analysis showing that avoidant attachment, compared to anxious attachment, is more strongly linked to relationship dissatisfaction (Li & Chan, 2012). Avoidant attachment was also the only interpersonal vulnerability that was linked to changes in relationship satisfaction, namely to declines in relationship satisfaction over 6 months. Interestingly, this vulnerability was tied to changes in the partner's satisfaction and not to changes in the person's own satisfaction, which highlights the interpersonal ramifications of avoidant attachment for romantic relationships. Other interpersonal vulnerabilities did not predict change in relationship satisfaction.

Socialization effects. As additional puzzle piece in understanding vulnerability–relationship transactions, we tested the effects of relationship satisfaction on later interpersonal vulnerabilities. In line with previous research (e.g., Davila et al., 1999; Mund et al., 2015; Mund & Neyer, 2014; Neyer & Asendorpf, 2001; Robins et al., 2002), we found that relationship dissatisfaction was linked to later neuroticism, low self-esteem, anxious attachment, and avoidant attachment. These transactional effects were most consistently found in the form of actor effects, suggesting that the link between satisfaction and later interpersonal vulnerabilities was primarily intrapersonal. We found no effects of relationship satisfaction on change in interpersonal vulnerabilities.

Conceptualizing and studying change in vulnerability–relationship transactions. As outlined, we found one effect on change in relationship satisfaction, but no effect on change in interpersonal vulnerabilities. We see at least three reasons for why this study found few effects on change in the outcome variables.

First, a time period between the testing phases of 4 to 6 months as used in this study, might have been too short to detect any changes. Given that the stability of relationship satisfaction ($r = .79$) and the stability of interpersonal vulnerabilities ($r = .57 - .86$) was rather high and the mean-level change was rather low ($d = .12$ for relationship satisfaction and $d = .01 - .14$ for interpersonal vulnerabilities) during the time period tested, it might have been unlikely to find change in these variables. It is possible that longer time intervals might reveal changes, as were found in a study by Lavner and Bradbury (2010): Over a time span of 4 years, a maladaptive personality (a composite of neuroticism, low self-esteem, and trait anger) predicted declines in relationship satisfaction in newlywed couples. The fact that the present study revealed an effect on change *at all* speaks for the necessity of further scrutinizing these change predictions in future research.

Second, it is reasonable to assume that effects on change are more likely to be found if predictors are also conceptualized as change variables. Addressing the interrelations between changes in

individual characteristics and relationship outcomes, such change–change predictions might more precisely capture the premise of dynamic transactionism (e.g., Magnusson, 1990; Magnusson & Allen, 1983). This method has been promising in the past (Mund & Neyer, 2014) and might provide a valuable springboard for future studies on vulnerability–relationship transactions in romantic couples.

Third, little was known about the life circumstances of the participating couples. Based on the Vulnerability–Stress–Adaptation model (Karney & Bradbury, 1995), it is reasonable to assume that important life transitions (such as marriage, childbirth, or unemployment), represent phases in which interpersonal vulnerabilities are more likely to shape the daily life of a romantic relationship and, ultimately, to shape partners' satisfaction with the relationship. During stressful times, couple members with interpersonal vulnerabilities might lack the appropriate adaptive processes to cope with upcoming challenges. Such a lack might, eventually, result in declines in relationship satisfaction. In less stressful times, however, the vulnerability–satisfaction link might have stabilized at a plateau, implying that changes are unlikely to occur in the couple. Hence, for future research, it might be promising to test vulnerability–relationship transactions in the context of such life transitions.

Insights into the Processes Underlying Vulnerability–Relationship Transactions

Going beyond the direct links between interpersonal vulnerabilities and relationship satisfaction, we built on previous research on relationship processes (e.g., Luerssen et al., 2017; Shallcross et al., 2011; Vater & Schröder-Abé, 2015) and shed light on *daily* relationship processes and their variability. We expected this process perspective to offer explanations for why people with interpersonal vulnerabilities and their partners are less satisfied in their relationships (i.e., selection effects), and insights into how relationship satisfaction is linked to interpersonal vulnerabilities (i.e., socialization effects).

Insights into selection effects. In line with our hypothesis, we found that individuals who were high in neuroticism, low in self-esteem, and high in insecure attachment reported lower levels of daily perceived responsiveness and positive expectations. Individuals who were low in self-esteem and high in insecure attachment also reported lower levels of daily self-disclosure. Partners of targets with these interpersonal vulnerabilities also reported lower levels of beneficial relationship processes; a finding that was most pronounced for perceived responsiveness and positive expectations, and which illustrates the interdependent nature of a romantic relationship. These less favorable relationship processes were linked to later relationship dissatisfaction of the target and, partially, to later relationship dissatisfaction of the partner.

Why were lower levels of beneficial relationship processes linked to lower relationship satisfaction? One reason might be that lower levels of daily perceived responsiveness, positive expectations, and self-disclosure might lead to relationship dissatisfaction because they are perceived as a lack of investment, commitment, or trust (Shaver & Mikulincer, 2006); a lack that might cumulatively imperil relationship satisfaction. This assumption is supported by our finding that lower perceived responsiveness had the strongest effect of all relationship processes tested on later relationship satisfaction. Responsiveness as the feeling that one is understood and cared for by the partner reflects a key element for a satisfying relationship; and aspects preceding or co-occurring with responsiveness, such as emotional intimacy, feelings of cohesion, or affective expression, have been shown to relate to higher relationship satisfaction (Hendrick, 1988; Johnson et al., 2005; Yoo, Bartle-

Haring, Day, & Gangamma, 2014). It is therefore likely that the absence of such a feeling harms relational well-being.

Given that (1) interpersonal vulnerabilities were associated with lower levels of beneficial relationship processes and that (2) such processes were associated with lower relationship satisfaction (mostly for the target person him-/herself and partially for his/her partner), we, finally, considered the mediational role of relationship processes in the associations. Most consistently, we found mediations on an actor–actor and partner–actor basis. These findings reflect that lower levels of favorable relationship processes were able to explain later relationship satisfaction of the target, which was mostly driven by the interpersonal vulnerabilities of both partners. That is, couple members with interpersonal vulnerabilities experienced lower levels of beneficial relationship processes across the 2 weeks tested, which explained the target person's lower relational well-being after this time period. The lack of finding actor–partner and partner–partner indirect effects suggests that the effect of relationship processes on later relationship satisfaction likely manifests *within a person* rather than between the partners.

Insights into socialization effects. Foregrounding the postulates of vulnerability–relationship transactions, this study also revealed insights into socialization effects: Couple members who were less satisfied experienced lower levels of beneficial relationship processes, which explained their later interpersonal vulnerabilities. These findings were mostly intrapersonal. The predominance of finding actor effects indicates that the process whereby relationship satisfaction is related to later interpersonal vulnerabilities occurs through a person's *own* emotions, cognitions, and behaviors rather than through the partner's emotions, cognitions, and behaviors. The only exception here was anxious attachment, for which we found actor and partner effects of lower levels of beneficial relationship processes on later attachment. This finding suggests that, of all interpersonal vulnerabilities investigated in the link between relationship satisfaction and later vulnerabilities, anxious attachment was the characteristic that was most susceptible to dyadic effects of relationship satisfaction; a prospect worth further investigation in future studies on attachment in romantic couples.

Conceptualizing and studying selection and socialization effects. In thinking of selection and socialization effects as a compound and shedding light on common underlying processes, the present findings add to the understanding of vulnerability–relationship transactions: People with interpersonal vulnerabilities experienced lower levels of favorable relationship processes, which explained their later relationship dissatisfaction; people who were less satisfied in their relationship, in turn, experienced lower levels of favorable relationship processes, which explained their later interpersonal vulnerabilities. In addition, across all effects tested, we found selection effects, compared to socialization effects, to be the more pronounced and robust. In addition, for selection effects, we observed both intra- and interpersonal effects, while, for socialization effects, we found mostly intrapersonal effects and only one interpersonal effect.

By providing these insights, the current study not only gives promising impetus for future intervention studies (see section on *Implications*), it also provides for a paradigmatic change in how to think about the antecedents and consequences of relationship dissatisfaction: Couple members who are dissatisfied in their romantic relationship tend to experience, on the one hand, more negative relationship processes, such as conflicts or hostile interaction strategies (e.g., Cramer, 2004;

Donnellan et al., 2007). On the other hand, as shown in the present study and related research, couple members who are dissatisfied are also less likely to experience and to benefit from potential positive relationship experiences (such as perceived responsiveness, positive expectations, or self-disclosure). Together, this constitutes a breeding ground for lower relationship satisfaction, which, in turn, accumulates more negative and fewer positive relationship experiences, potentially leading to a vicious circle that has ramifications for individuals' relationships and their personalities. Understanding the underlying processes that drive this loop is the first step toward active and volitional changes of these processes, namely through intervening against the deteriorating processes and through rebuilding and re-activating the beneficial processes.

The Missing Tie of Relationship–Process Variability in Vulnerability–Relationship Transactions

Beyond the mediational role of the levels of relationship processes that we hypothesized in the transactional vulnerability–relationship link, we also expected day-to-day variability to mediate this link. Indeed, we found that individuals with interpersonal vulnerabilities reported higher day-to-day variability in their relationship processes. Similar to the idea of individuals with anxious attachment experiencing their relationships as "emotional roller coasters" (Tidwell et al., 1996, p. 731), we conclude that people with any of the vulnerabilities we tested reported more emotional, cognitive, and behavioral ups and downs in their everyday couple life.

This variability, however, did not explain their later relationship dissatisfaction or their later interpersonal vulnerabilities; neither on an actor nor on a partner level. On the contrary, the only significant effect that we found was that the higher day-to-day variability in perceived responsiveness among people high in neuroticism explained their higher relationship satisfaction. We can only speculate as to why relationship–process variability was not an explanatory mechanism in the link between interpersonal vulnerabilities and relationship dissatisfaction, and revealed even positive effects. We see four possible reasons.

First, the sensitivity of people with interpersonal vulnerabilities might provide benefits that overshadow the potential negative effects associated with variability: People with interpersonal vulnerabilities might be more sensitive to the daily couple dynamic and adjust their own feelings, thoughts, and behaviors to the current situation and/or the partner. For example, that person high in neuroticism were more variable in their perceptions of partner responsiveness might reflect a sensitive and dynamic adjustment in responsiveness, which might be conducive for relationship functioning. However, we concede that we knew little about the specific situation the couple was embedded in as we knew little about whether the perception of partner responsiveness was in line with the enacted responsiveness of the partner and/or with the partner's own perception of his/her levels of responsiveness. More research is needed to reveal the various aspects of enacted and perceived responsiveness, which will be necessary to support the potentially beneficial role of neuroticism for romantic relationships.

Second, and from the perspective of the partner, it is reasonable to assume that day-to-day variability may be positively interpreted by the partner inasmuch as more intensive reactions to the daily couple dynamic might demonstrate stronger commitment to the relationship (for similar findings with regard to conflicts, see Overall, 2018). Thus, partners might understand the accentuated ups and

downs of persons with interpersonal vulnerabilities as a sign of relationship importance and might, in turn, be less likely to be dissatisfied in their relationship.

Third, given that relationship-process variability was correlated between partners, both partners might be familiar with variable emotions, cognitions, and behaviors in themselves and their partner. Hence, relationship-process variability might be more common and more predictable in the daily relationship experiences of people with interpersonal vulnerabilities, which might reduce the threatening nature of day-to-day variability in relationship processes.

Fourth, and related to the previous point, variability might also be experienced as less threatening by people with interpersonal vulnerabilities because they hold different conceptions of what constitutes a satisfying relationship. Given that people with interpersonal vulnerabilities might have experienced more ups and downs in their romantic relationship history, their concept of a satisfying relationship might rely less on a stable everyday couple life. Contrary to the idea that only a stable relationship can be satisfying, as found, for instance, among people with secure attachment (Girme et al., 2018), people with interpersonal vulnerabilities might have a higher tolerance for variability in their standards and expectations for a romantic relationship; standards and expectations that shape the development of a relationship. For instance, people with high standards, such as the belief that arguments should not be part of a good relationship or the belief that romantic partners should be able to understand one another without words, have been found to be more likely to separate over time (Kurdek, 1992). As such, standards and expectations reflect a bar that the daily life of a relationship should reach to be experienced as satisfying. Based on the present findings, people with interpersonal vulnerabilities might be more tolerant of variability, which limits the power of variability to deteriorate relationship satisfaction. Investigating how individuals with different individual characteristics conceptualize a satisfying relationship and how such concepts shape the impact of everyday couple life on relationship satisfaction might provide a springboard for future research.

To summarize, the present findings speak more for the importance of relationship processes per se than they do for the relevance of relationship-process variability. As such, we maintain that what makes people with interpersonal vulnerabilities less satisfied in their relationship must be ascribed to their lower levels of favorable relationship processes in their daily living as a couple rather than to day-to-day variability in these processes.

Implications

We see several implications of this study's findings. From a research viewpoint, the present results highlight the necessity of thinking of interpersonal vulnerabilities, daily couple life, and relationship satisfaction as a transactional compound, as shown in the variables' reciprocity and their transactional effects. Yet, while we focused on interpersonal vulnerabilities in reporting our findings, the present results can, and must also, be interpreted in light of interpersonal *strengths*: Participants low in interpersonal vulnerabilities (i.e. people high in emotional stability, high in self-esteem, and with secure attachment) experienced more favorable relationship processes, which explained their higher levels of relationship satisfaction. Similarly, and thought of in terms of transactions, people who were more satisfied in their romantic relationship experienced more favorable relationship processes, which explained their lower levels of interpersonal vulnerabilities.

From a theoretical viewpoint, the results suggest that—in addition to the importance of life satisfaction, positive affect, and negative affect for later personality (Fetvadjiev & He, 2018; Soto, 2015; Specht, Egloff, & Schmukle, 2013)—, domain-specific satisfaction, such as relationship satisfaction, might also be important to consider. Therefore, different sub-aspects of subjective well-being (Diener, 2000) can be understood as important catalysts for later personality. This indicates a conceptual overlap of the theoretical underpinnings of the research on personality–relationship transactions and on the link between subjective well-being and personality development. We see that both research lines could benefit from each other’s theoretical reasonings in how well-being can shape later personality.

From a practitioner viewpoint, empirical insights into the processes underlying the vulnerability–relationship link are prerequisites for potential future interventions. From research on volitional personality development, it is known that people can intentionally change their personality through their goals to change (Hennecke, Bleidorn, Denissen, & Wood, 2014; Hudson & Fraley, 2015; Quintus, Egloff, & Wrzus, 2017). Yet, to make such changes long lasting, people need to embed their newly developed emotional, cognitive, and behavioral patterns in repeated daily situations and daily experiences to maintain such development (Wrzus & Roberts, 2017). Here, relationship processes might be a promising target because they are identifiable, frequently occurring, and potentially habitual, offering a favorable environment for change (Hennecke et al., 2014; Wrzus & Roberts, 2017). As such, the daily life of a romantic relationship serves as gifted context through which changes in relationship processes can, ultimately, fuel changes in personality (see also, Finn, Mitte, & Neyer, 2015); an incentive for future intervention studies in the romantic context.

Strengths, Limitations, and Future Steps

This study has several strengths. First, unique to the current study is that two aspects of relationship processes (i.e., their daily level and their day-to-day variability) were tested as mediators for both directions of personality–relationship transactions (i.e., selection and socialization effects). Second, the sample was large and age-heterogenous with over 600 couples aged from 18 to 81 years, which strengthens the generalizability of the results across the adult life span. Third, given that the questionnaires were online-based, the study reached participants beyond the immediate geographic location of the study base. This allowed the inclusion of couples from three German-speaking countries (i.e., Austria, Germany, and Switzerland). Fourth, the sample consisted of couples from both a student community and a broader community, reflecting a relatively heterogeneous sample in terms of age, relationship duration, marital status, and parental status. Fifth, both members of each couple were involved in the study and reported on a daily basis how they experienced their relationship—two aspects that are important to consider if we are to obtain insights into couple dynamics. Sixth, we included individual characteristics that can be understood from the perspective of core characteristics (in the case of neuroticism) and from the perspective of surface characteristics (in the case of self-esteem and attachment styles) (Asendorpf & van Aken, 2003). This broad conceptualization of individual characteristics provided us with a more comprehensive view on the transactional effects between couple members’ personality and their relationship. Finally, we assessed three categories of relationship processes (i.e., emotions, cognitions, and behaviors), which takes into account the multi-dimensional nature of a couple’s everyday life.

Despite these strengths, certain limitations need to be addressed. First, given that this study was an internet-based investigation, participants were required to have a certain level of computer expertise. Assessing large numbers of couples is greatly facilitated using online survey tools, but this might have had limited our sample in terms of age or computer literacy (Poynton, 2005). To reach samples that are less familiar with computer usage, future studies might include a training and/or testing interval for people (of any age) who have less confidence in using computers or mobile devices. Second, in our APIMs and APIMeMs, we focused on one interpersonal vulnerability per model. We need to set such focus because—even though our sample size was large—the amount of effects tested would have led to less reliable estimates if we had included more than one interpersonal vulnerability per model. Yet, given that interpersonal vulnerabilities likely relate to each other, future studies with bigger samples might include all vulnerabilities in one model and control for their impact to obtain the single contribution of the respective vulnerability (see for example, Geukes, Nestler, Hutteman, Dufner, et al., 2017). Third, we did not include external circumstances, life events, or demands that might have affected the couple and the processes that couple members experience. Future studies would benefit from assessing the context in which the couple is embedded (Bronfenbrenner, 1994; Karney & Bradbury, 2005; McNulty, 2016). Fourth, from each relationship–process category, we focused on one process only even though other processes exist. For example, for the category of cognitions, we focused on positive expectations, but there exist, at least, four other types of cognitions (selective perception, attributions, assumptions, and standards; Baucom, Epstein, Rankin, & Burnett, 1996; Baucom, Epstein, Sayers, & Sher, 1989). The same variety likely applies for emotional and behavioral processes. Expanding the present hypotheses to different processes within the same category likely enhances the generalizability of the findings or provides insights into the specificity of each process category. Fifth, we asked participants about their behaviors, but did not observe concrete behavior, such as acts of self-disclosure. Similarly, we asked for certain emotional reactions, but did not measure participants' emotional functioning, such as their psychophysical reactions (e.g., Powers, Pietromonaco, Gunlicks, & Sayer, 2006). Addressing this limitation is important because conclusions about associations are otherwise confounded by the source of information (Bank, Dishion, Skinner, & Patterson, 1990), which here are self-reports. To address the issues associated with shared method variance, prospective studies might add partner-reports or observational data to self-report measures. For instance, couple members might be video recorded during an act of self-disclosure to investigate both partners' concrete behavior as a self-disclosing or listening person in such a situation. Sixth, we did not ask for the valence or content of the self-disclosed content, for example whether the content had a positive or negative connotation or whether personal failures or positive events were shared (i.e., capitalization; Gable & Reis, 2010; MacGregor et al., 2013). This is relevant to consider because different content might yield different effects. Finally, self-disclosure does not occur in isolation. Partners usually want their self-disclosure to be met with either responsiveness and understanding, or mutual self-disclosure (Laurenceau, Barrett, & Pietromonaco, 1998 ; Laurenceau et al., 2005). Considering that disclosure begets disclosure, people are more likely to disclose at a comparable level of intimacy to that from whom they have received disclosure (e.g., Derlega, Harris, & Chaikin, 1973; Jourard & Landsman, 1960). Future studies might consider measuring reciprocal self-disclosure through both partner reports and recorded video

conversations.

Conclusion

Franz Kafka described love as a road trip shared by passengers. To stick to this metaphor, in the present study, we explored the suitcases that the passengers take on their journey. To that aim, we investigated prominent interpersonal vulnerabilities and tested how they are transactionally associated with daily relationship processes, relationship–process variability, and relationship satisfaction. As such, our findings add to the understanding of why some couple members travel a fairly smooth journey, whereas others experience bumps in the road: Couple members with interpersonal vulnerabilities reported lower levels of favorable relationship experiences and higher variability in these experiences. However, their relationship satisfaction did not appear to be shaped by the variability but by the mere occurrence of these less favorable emotions, thoughts, and behaviors in their daily life as a couple; a mediation that was equally present in the reserved direction.

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Tables and Figures

Table 1

Means and Standard Deviations of the Study Variables for Female and Male Partners

Measure	Women		Men		d_z
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Interpersonal vulnerability					
Neuroticism T1	3.11	0.73	2.55	0.71	.52
Neuroticism T2	3.04	0.79	2.46	0.70	.53
Neuroticism T3	3.09	0.75	2.53	0.71	.53
Low self-esteem T1	1.80	0.59	1.66	0.50	.18
Low self-esteem T2	1.75	0.60	1.61	0.51	.19
Low self-esteem T3	1.74	0.58	1.61	0.51	.18
Anxious attachment T1	2.27	1.29	2.11	1.16	.10
Anxious attachment T2	2.07	1.18	2.05	1.12	.01
Anxious attachment T3	2.25	1.25	2.15	1.18	.06
Avoidant attachment T1	1.96	0.89	2.15	0.91	.17
Avoidant attachment T2	1.91	0.86	2.13	0.94	.21
Avoidant attachment T3	1.98	0.93	2.21	0.93	.22
Relationship outcome					
Relationship satisfaction T1	4.34	0.53	4.30	0.53	.07
Relationship satisfaction T2	4.39	0.53	4.34	0.54	.10
Relationship satisfaction T3	4.33	0.58	4.26	0.57	.13
Relationship process T_{Proc}					
Level					
Perceived responsiveness	4.00	0.60	3.95	0.58	.09
Positive expectations	4.13	0.57	4.06	0.58	.11
Self-disclosure	3.53	0.60	3.44	0.65	.14
Variability					
Perceived responsiveness	0.73	0.30	0.69	0.27	.12
Positive expectations	0.61	0.28	0.62	0.27	.03
Self-disclosure	0.92	0.29	0.85	0.27	.21

Note. Cohen's d denotes the standardized mean difference between both partners' measures. d_z represents Cohen's d for paired samples. Significant mean differences between couple members are displayed in bold ($p < .05$). Level of relationship processes are the means across 14 days, while variability of relationship processes are the standard deviations across 14 days.

Table 2

Bivariate Correlations of the Study Variables and Relationship Duration for Female and Male Partners

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1 Neuroticism T1	-.12	.85	.78	.52	.53	.51	.24	.23	.28	.13	.16	.19	-.23	-.20	-.23	-.15	-.13	-.06	.12	.06	.05	.05
2 Neuroticism T2	.88	-.10	.82	.53	.58	.55	.25	.23	.26	.11	.15	.20	-.25	-.25	-.26	-.19	-.12	-.07	.14	.07	.06	.03
3 Neuroticism T3	.81	.85	-.08	.50	.57	.61	.27	.29	.33	.06	.15	.21	-.25	-.25	-.26	-.15	-.15	.00	.10	.06	.01	-.00
4 Low self-esteem T1	.56	.59	.57	.07	.83	.75	.32	.30	.30	.21	.26	.26	-.25	-.24	-.22	-.17	-.15	-.05	.09	.06	.01	-.09
5 Low self-esteem T2	.56	.62	.58	.89	.10	.82	.33	.39	.37	.21	.33	.32	-.29	-.34	-.29	-.24	-.19	-.10	.12	.11	.03	-.08
6 Low self-esteem T3	.49	.55	.58	.85	.87	.13	.34	.38	.40	.18	.25	.33	-.29	-.31	-.36	-.24	-.20	-.10	.12	.09	.02	-.06
7 Anxious attachment T1	.29	.30	.25	.39	.36	.35	.12	.68	.59	.29	.27	.29	-.36	-.29	-.28	-.31	-.22	-.09	.11	.12	.02	-.06
8 Anxious attachment T2	.29	.33	.30	.35	.37	.34	.71	.20	.64	.30	.44	.36	-.41	-.45	-.37	-.40	-.32	-.12	.18	.19	.05	-.10
9 Anxious attachment T3	.29	.32	.29	.37	.36	.37	.67	.67	.21	.25	.33	.45	-.32	-.33	-.36	-.34	-.25	-.10	.20	.17	.08	-.03
10 Avoidant attachment T1	.04	.05	.01	.17	.15	.16	.37	.30	.33	.25	.66	.59	-.57	-.48	-.43	-.44	-.36	-.34	.25	.18	.13	.01
11 Avoidant attachment T2	.09	.13	.10	.21	.22	.21	.27	.37	.32	.61	.30	.66	-.53	-.62	-.48	-.47	-.41	-.31	.25	.21	.07	-.05
12 Avoidant attachment T3	.05	.10	.08	.20	.21	.21	.23	.28	.35	.55	.65	.35	-.48	-.50	-.54	-.45	-.34	-.28	.26	.20	.05	-.01
13 Relationship satisfaction T1	-.15	-.16	-.11	-.22	-.22	-.23	-.38	-.36	-.39	-.52	-.52	-.52	.58	.84	.75	.59	.51	.36	-.27	-.22	-.12	-.04
14 Relationship satisfaction T2	-.14	-.18	-.13	-.22	-.25	-.24	-.34	-.39	-.39	-.49	-.58	-.54	.85	.56	.77	.62	.51	.35	-.28	-.25	-.10	-.04
15 Relationship satisfaction T3	-.13	-.15	-.13	-.20	-.21	-.21	-.31	-.32	-.41	-.47	-.52	-.55	.76	.81	.41	.58	.48	.32	-.31	-.25	-.09	-.02
16 Responsiveness (level)	-.15	-.18	-.13	-.20	-.24	-.23	-.26	-.34	-.34	-.38	-.51	-.46	.61	.67	.62	.56	.64	.65	-.52	-.34	-.28	-.04
17 Expectations (level)	-.10	-.15	-.10	-.14	-.18	-.18	-.26	-.31	-.29	-.32	-.40	-.39	.53	.55	.52	.66	.41	.39	-.29	-.48	-.19	-.00
18 Self-disclosure (level)	-.06	-.11	-.08	-.15	-.15	-.15	-.13	-.21	-.17	-.25	-.37	-.32	.36	.42	.39	.65	.47	.42	-.40	-.18	-.41	-.06
19 Responsiveness (variability)	.08	.11	.11	.06	.07	.09	.13	.16	.19	.12	.22	.19	-.30	-.33	-.31	-.61	-.36	-.40	.42	.48	.61	-.12
20 Expectations (variability)	.10	.16	.14	.10	.10	.12	.20	.20	.21	.11	.19	.21	-.28	-.26	-.23	-.38	-.57	-.24	.51	.25	.36	-.15
21 Self-disclosure (variability)	.06	.08	.08	.03	.04	.05	.06	.07	.08	.05	.10	.09	-.14	-.16	-.13	-.32	-.22	-.53	.52	.33	.29	-.07
22 Relationship duration	-.22	-.25	-.26	-.16	-.15	-.13	-.14	-.16	-.10	.05	-.03	.03	-.19	-.15	-.15	-.09	-.09	-.09	-.04	-.09	-.08	-

Note. Correlations below the diagonal reflect coefficients for female partners, while correlations above the diagonal reflect coefficients for male partners. The diagonal presents correlations between partners. Level of relationship processes are the means across 14 days, while variability of relationship processes are the standard deviations across 14 days. Coefficients in bold are significant ($p < .01$).

Table 3

Actor and Partner Effects for Actor–Partner Interdependence Models with the Respective Interpersonal Vulnerability at T1 as Predictor and Later Relationship Satisfaction as Criterion

Interpersonal vulnerability	Actor effect			Partner effect		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
Relationship satisfaction at T2						
Neuroticism	-.23	-.17	[-.24, -.10]	-.24	-.17	[-.24, -.11]
Low self-esteem	-.29	-.26	[-.34, -.18]	-.15	-.16	[-.24, -.08]
Anxious attachment	-.35	-.20	[-.26, -.15]	-.33	-.21	[-.27, -.15]
Avoidant attachment	-.56	-.42	[-.51, -.33]	-.21	-.13	[-.20, -.07]
Relationship satisfaction at T3						
Neuroticism	-.25	-.19	[-.25, -.12]	-.21	-.16	[-.22, -.09]
Low self-esteem	-.26	-.24	[-.32, -.16]	-.14	-.15	[-.23, -.07]
Anxious attachment	-.32	-.20	[-.26, -.14]	-.31	-.21	[-.27, -.15]
Avoidant attachment	-.48	-.37	[-.44, -.29]	-.25	-.17	[-.23, -.10]
Change in relationship satisfaction between T2 and T3						
Neuroticism	-.07	-.02	[-.07, .02]	.01	.01	[-.04, .05]
Low self-esteem	.02	.01	[-.04, .06]	-.00	-.00	[-.06, .05]
Anxious attachment	-.03	-.01	[-.05, .03]	-.00	-.00	[-.04, .04]
Avoidant attachment	.09	.04	[-.01, .09]	-.17	-.06	[-.10, -.01]

Note. In all models, we controlled for relationship duration. Actor effects reflect intrapersonal effects, whereas partner effects are interpersonal effects. The actor and partner effects were constrained to be equal across female and male partners. Coefficients in bold are significant ($p < .01$).

Table 4

Actor and Partner Effects for Actor–Partner Interdependence Models with Relationship Satisfaction at T1 as Predictor and the Respective Later Interpersonal Vulnerability as Criterion

Interpersonal vulnerability	Actor effect			Partner effect		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
Interpersonal vulnerability at T2						
Neuroticism	-.17	-.27	[-.45, -.10]	-.11	-.15	[-.33, .03]
Low self-esteem	-.27	-.32	[-.44, -.21]	.01	.01	[-.10, .13]
Anxious attachment	-.36	-.69	[-.92, -.47]	-.14	-.25	[-.46, -.05]
Avoidant attachment	-.77	-1.04	[-1.22, -.85]	.05	.07	[-.07, .20]
Interpersonal vulnerability at T3						
Neuroticism	-.16	-.25	[-.43, -.08]	-.09	-.13	[-.30, .05]
Low self-esteem	-.24	-.28	[-.39, -.16]	-.05	-.05	[-.16, .06]
Anxious attachment	-.26	-.46	[-.66, -.26]	-.16	-.27	[-.45, -.08]
Avoidant attachment	-.66	-.97	[-1.15, -.78]	.03	.04	[-.11, .19]
Change in interpersonal vulnerability between T2 and T3						
Neuroticism	.06	.03	[-.07, .14]	.03	.02	[-.08, .12]
Low self-esteem	.10	.05	[-.02, .11]	-.14	-.06	[-.13, .01]
Anxious attachment	.07	.08	[-.08, .24]	-.04	-.04	[-.20, .13]
Avoidant attachment	.14	.12	[-.02, .26]	-.08	-.06	[-.20, .07]

Note. In all models, we controlled for relationship duration. The actor and partner effects were constrained to be equal across female and male partners. Coefficients in bold are significant ($p < .01$).

Table 5

Direct Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Neuroticism at T1 as Predictor, the Respective Relationship Process as Mediator, and Later Relationship Satisfaction as Criterion

Relationship process	Neuroticism → relationship process						Relationship process → relationship satisfaction					
	Actor effect			Partner effect			Actor effect			Partner effect		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
Relationship satisfaction at T2												
Responsiveness	-.21	-.17	[-.24, -.10]	-.18	-.14	[-.21, -.07]	.68	.60	[.52, .68]	.10	.09	[.02, .16]
Expectations	-.16	-.13	[-.21, -.06]	-.22	-.19	[-.26, -.11]	.50	.43	[.35, .52]	.09	.08	[.00, .16]
Self-disclosure	-.08	-.05	[-.11, .004]	-.09	-.06	[-.11, -.001]	.33	.36	[.26, .45]	.13	.14	[.05, .23]
Relationship satisfaction T3												
Responsiveness	-.21	-.17	[-.24, -.10]	-.18	-.14	[-.21, -.07]	.58	.54	[.46, .62]	.08	.08	[.002, .16]
Expectations	-.16	-.14	[-.21, -.06]	-.23	-.19	[-.27, -.12]	.44	.39	[.30, .47]	.09	.08	[.002, .17]
Self-disclosure	-.08	-.05	[-.11, .004]	-.09	-.06	[-.11, .00]	.32	.36	[.26, .45]	.08	.09	[-.001, .19]
Change in relationship satisfaction between T2 and T3												
Responsiveness	-.24	-.20	[-.27, -.13]	-.21	-.18	[-.25, -.10]	.07	.03	[-.03, .10]	-.07	-.03	[-.09, .03]
Expectations	-.19	-.17	[-.25, -.09]	-.26	-.23	[-.32, -.15]	.09	.04	[-.02, .10]	.01	.00	[-.06, .06]
Self-disclosure	-.09	-.06	[-.12, -.01]	-.10	-.07	[-.12, -.01]	.08	.05	[-.02, .11]	-.07	-.04	[-.10, .03]

Note. Coefficients in bold are significant ($p < .01$).

Table 6

Indirect Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Neuroticism at T1 as Predictor, the Respective Relationship Process as Mediator, and Later Relationship Satisfaction as Criterion

Relationship process	Actor-actor			Actor-partner			Partner-actor			Partner-partner		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
Relationship satisfaction at T2												
Responsiveness	-.14	-.10	[-.15, -.06]	-.02	-.02	[-.03, -.002]	-.12	-.09	[-.13, -.04]	-.02	-.01	[-.001, -.02]
Expectations	-.08	-.06	[-.09, -.02]	-.01	-.01	[-.02, .001]	-.11	-.08	[-.12, -.05]	-.02	-.02	[-.03, .001]
Self-disclosure	-.03	-.02	[-.04, .002]	-.01	-.01	[-.02, .002]	-.03	-.02	[-.04, .00]	-.01	-.01	[-.02, .001]
Relationship satisfaction at T3												
Responsiveness	-.12	-.09	[-.13, -.05]	-.02	-.01	[-.03, .001]	-.10	-.08	[-.12, -.04]	-.02	-.01	[-.02, .001]
Expectations	-.07	-.05	[-.08, -.02]	-.02	-.01	[-.02, .001]	-.10	-.07	[-.11, -.04]	-.02	-.02	[-.03, .001]
Self-disclosure	-.02	-.02	[-.04, .002]	-.01	-.01	[-.01, .002]	-.03	-.02	[-.04, .00]	-.01	-.01	[-.01, .002]
Change in relationship satisfaction between T2 and T3												
Responsiveness	-.02	-.01	[-.02, .01]	.02	.01	[-.01, .02]	-.02	-.01	[-.02, .01]	.01	.01	[-.01, .02]
Expectations	-.02	-.01	[-.02, .004]	-.00	-.00	[-.01, .01]	-.02	-.01	[-.02, .01]	-.00	-.00	[-.02, .01]
Self-disclosure	-.01	-.00	[-.01, .002]	.01	.00	[-.002, .01]	-.01	-.00	[-.01, .002]	.01	.00	[-.002, .01]

Note. In all models, we controlled for relationship duration. Actor-actor indirect effects reflect two actor effects (predictor \rightarrow mediator; mediator \rightarrow criterion); actor-partner indirect effects reflect one actor effect (predictor \rightarrow mediator) and one partner effect (mediator \rightarrow criterion); partner-actor indirect effects reflect one partner effect (predictor \rightarrow mediator) and one actor effect (mediator \rightarrow criterion); partner-partner indirect effects reflect two partner effects (predictor \rightarrow mediator; mediator \rightarrow criterion). The actor and partner effects were constrained to be equal across female and male partners. Coefficients in bold are significant ($p < .01$).

Table 7

Direct Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Low Self-Esteem at T1 as Predictor, the Respective Relationship Process as Mediator, and Later Relationship Satisfaction as Criterion

Relationship process	Low self-esteem → relationship process						Relationship process → relationship satisfaction					
	Actor effect			Partner effect			Actor effect			Partner effect		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
	Relationship satisfaction at T2											
Responsiveness	-.24	-.25	[-.33, -.16]	-.12	-.14	[-.23, -.06]	.66	.59	[.51, .67]	.10	.09	[.02, .16]
Expectations	-.17	-.19	[-.28, -.09]	-.15	-.19	[-.28, -.09]	.50	.43	[.34, .51]	.09	.08	[-.002, .16]
Self-disclosure	-.13	-.11	[-.17, -.04]	-.08	-.08	[-.15, -.01]	.31	.34	[.24, .43]	.11	.12	[.03, .21]
	Relationship satisfaction T3											
Responsiveness	-.24	-.25	[-.33, -.16]	-.12	-.14	[-.23, -.06]	.57	.53	[.45, .61]	.08	.08	[.00, .16]
Expectations	-.17	-.19	[-.28, -.10]	-.15	-.19	[-.29, -.10]	.43	.39	[.30, .47]	.10	.09	[.004, .17]
Self-disclosure	-.13	-.10	[-.17, -.04]	-.08	-.08	[-.15, -.01]	.30	.34	[.24, .44]	.07	.08	[-.02, .17]
	Change in relationship satisfaction between T2 and T3											
Responsiveness	-.26	-.27	[-.35, -.18]	-.13	-.16	[-.24, -.07]	.08	.04	[-.03, .10]	-.07	-.03	[-.10, .03]
Expectations	-.19	-.21	[-.31, -.11]	-.17	-.22	[-.32, -.12]	.09	.04	[-.02, .10]	.02	.01	[-.05, .07]
Self-disclosure	-.14	-.11	[-.18, -.04]	-.09	-.08	[-.15, -.01]	.09	.05	[-.02, .12]	-.06	-.04	[-.10, .03]

Note. Coefficients in bold are significant ($p < .01$).

Table 8

Indirect Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Low Self-Esteem at T1 as Predictor, the Respective Relationship Process as Mediator, and Later Relationship Satisfaction as Criterion

Relationship process	Actor-actor			Actor-partner			Partner-actor			Partner-partner		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
Relationship satisfaction at T2												
Responsiveness	-0.16	-0.14	[-.20, -.09]	-0.02	-0.02	[-.04, -.003]	-0.08	-0.08	[-.13, -.03]	-0.01	-0.01	[-.03, .00]
Expectations	-0.09	-0.08	[-.12, -.04]	-0.02	-0.01	[-.03, .002]	-0.07	-0.08	[-.12, -.04]	-0.01	-0.01	[-.03, .002]
Self-disclosure	-0.04	-0.04	[-.06, -.01]	-0.01	-0.01	[-.03, .00]	-0.02	-0.03	[-.05, -.002]	-0.01	-0.01	[-.02, .001]
Relationship satisfaction at T3												
Responsiveness	-0.14	-0.13	[-.18, -.08]	-0.02	-0.02	[-.04, .001]	-0.07	-0.08	[-.12, -.03]	-0.01	-0.01	[-.02, .002]
Expectations	-0.08	-0.07	[-.11, -.03]	-0.02	-0.02	[-.03, .001]	-0.07	-0.07	[-.11, -.04]	-0.02	-0.02	[-.03, .001]
Self-disclosure	-0.04	-0.04	[-.06, -.01]	-0.01	-0.01	[-.02, .003]	-0.02	-0.03	[-.05, -.002]	-0.01	-0.01	[-.02, .003]
Change in relationship satisfaction between T2 and T3												
Responsiveness	-0.02	-0.01	[-.03, .01]	.02	.01	[-.01, .03]	-0.01	-0.01	[-.02, .01]	.01	.01	[-.01, .02]
Expectations	-0.02	-0.01	[-.02, .01]	-0.00	-0.00	[-.01, .01]	-0.02	-0.01	[-.02, .01]	-0.00	-0.00	[-.02, .01]
Self-disclosure	-0.01	-0.01	[-.01, .003]	.01	.00	[-.004, .01]	-0.01	-0.00	[-.01, .002]	.01	.00	[-.003, .01]

Note. In all models, we controlled for relationship duration. The actor and partner effects were constrained to be equal across female and male partners. Coefficients in bold are significant ($p < .01$).

Table 9

Direct Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Anxious Attachment at T1 as Predictor, the Respective Relationship Process as Mediator, and Later Relationship Satisfaction as Criterion

Relationship process	Anxious attachment → relationship process						Relationship process → relationship satisfaction					
	Actor effect			Partner effect			Actor effect			Partner effect		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
Relationship satisfaction at T2												
Responsiveness	-0.30	-0.21	[-.27, -.15]	-0.22	-0.16	[-.22, -.10]	.63	.55	[.47, .63]	.04	.04	[-.04, .11]
Expectations	-0.28	-0.19	[-.26, -.13]	-0.15	-0.11	[-.18, -.05]	.47	.41	[.32, .49]	.05	.05	[-.03, .12]
Self-disclosure	-0.14	-0.07	[-.12, -.03]	-0.13	-0.08	[-.13, -.03]	.29	.31	[.22, .40]	.09	.09	[.001, .18]
Relationship satisfaction T3												
Responsiveness	-0.29	-0.21	[-.27, -.15]	-0.22	-0.16	[-.22, -.10]	.53	.48	[.40, .57]	.02	.02	[-.06, .10]
Expectations	-0.28	-0.19	[-.26, -.13]	-0.15	-0.11	[-.18, -.05]	.41	.37	[.28, .46]	.06	.05	[-.03, .13]
Self-disclosure	-0.13	-0.07	[-.12, -.03]	-0.13	-0.08	[-.13, -.03]	.28	-.31	[.22, .40]	.05	.05	[-.04, .14]
Change in relationship satisfaction between T2 and T3												
Responsiveness	-0.49	-0.32	[-.42, -.23]	-0.40	-0.27	[-.37, -.17]	.09	.04	[-.04, .12]	-.06	-.03	[-.10, .05]
Expectations	-0.39	-0.24	[-.31, -.18]	-0.25	-0.17	[-.24, -.10]	.10	.05	[-.02, .11]	.01	.01	[-.06, .07]
Self-disclosure	-0.17	-0.09	[-.14, -.04]	-0.17	-0.10	[-.14, -.05]	.08	.05	[-.02, .11]	-.07	-.04	[-.10, .03]

Note. Coefficients in bold are significant ($p < .01$).

Table 10

Indirect Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Anxious Attachment at T1 as Predictor, the Respective Relationship Process as Mediator, and Later Relationship Satisfaction as Criterion

Relationship process	Actor-actor			Actor-partner			Partner-actor			Partner-partner		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
Relationship satisfaction at T2												
Responsiveness	-.19	-.12	[-.15, -.08]	-.01	-.01	[-.02, .01]	-.14	-.09	[-.12, -.05]	-.01	-.01	[-.02, .01]
Expectations	-.13	-.08	[-.11, -.05]	-.01	-.01	[-.02, .01]	-.07	-.05	[-.07, -.02]	-.01	-.01	[-.01, .004]
Self-disclosure	-.04	-.02	[-.04, -.01]	-.01	-.01	[-.01, .001]	-.04	-.03	[-.04, -.01]	-.01	-.01	[-.02, .001]
Relationship satisfaction at T3												
Responsiveness	-.16	-.10	[-.14, -.07]	-.01	-.00	[-.02, .01]	-.12	-.08	[-.11, -.05]	-.01	-.00	[-.02, .01]
Expectations	-.11	-.07	[-.10, -.04]	-.02	-.01	[-.03, .01]	-.06	-.04	[-.07, -.02]	-.01	-.01	[-.02, .004]
Self-disclosure	-.04	-.02	[-.04, -.01]	-.01	-.00	[-.01, .003]	-.04	-.03	[-.04, -.01]	-.01	-.00	[-.01, .003]
Change in relationship satisfaction between T2 and T3												
Responsiveness	-.05	-.01	[-.04, .01]	.03	.01	[-.02, .03]	-.04	-.01	[-.03, .01]	.02	.01	[-.01, .03]
Expectations	-.04	-.01	[-.03, .01]	-.01	-.00	[-.02, .01]	-.02	-.01	[-.02, .004]	-.00	-.00	[-.01, .01]
Self-disclosure	-.01	-.00	[-.01, .002]	.01	.00	[-.003, .01]	-.01	-.00	[-.01, .002]	.01	.00	[-.00, .01]

Note. In all models, we controlled for relationship duration. The actor and partner effects were constrained to be equal across female and male partners. Coefficients in bold are significant ($p < .01$).

Table 11

Direct Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Avoidant Attachment at T1 as Predictor, the Respective Relationship Process as Mediator, and Later Relationship Satisfaction as Criterion

Relationship process	Avoidant attachment → relationship process						Relationship process → relationship satisfaction					
	Actor effect			Partner effect			Actor effect			Partner effect		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
	Relationship satisfaction at T2											
Responsiveness	-.43	-.39	[-.47, -.30]	-.12	-.09	[-.16, -.03]	.51	.43	[.35, .52]	.06	.05	[-.03, .13]
Expectations	-.38	-.33	[-.42, -.24]	-.15	-.12	[-.19, -.04]	.34	.29	[.21, .37]	.04	.03	[-.05, .11]
Self-disclosure	-.30	-.21	[-.27, -.15]	-.09	-.06	[-.11, -.003]	.17	.18	[.09, .26]	.05	.05	[-.04, .13]
	Relationship satisfaction at T3											
Responsiveness	-.43	-.38	[-.46, -.30]	-.12	-.09	[-.15, -.03]	.44	.39	[.30, .48]	.00	.00	[-.08, .09]
Expectations	-.37	-.32	[-.41, -.24]	-.14	-.11	[-.18, -.04]	.30	.27	[.18, .36]	.02	.02	[-.06, .10]
Self-disclosure	-.29	-.20	[-.26, -.14]	-.09	-.06	[-.11, -.002]	.18	.19	[.10, .28]	-.01	-.01	[-.10, .09]
	Change in relationship satisfaction between T2 and T3											
Responsiveness	-.55	-.53	[-.64, -.42]	-.11	-.10	[-.18, -.02]	.17	.08	[-.003, .16]	-.19	-.09	[-.17, -.01]
Expectations	-.45	-.42	[-.52, -.32]	-.15	-.13	[-.21, -.05]	.11	.05	[-.02, .12]	-.05	-.02	[-.09, .05]
Self-disclosure	-.31	-.24	[-.30, -.17]	-.10	-.06	[-.12, -.01]	.08	.05	[-.02, .12]	-.12	-.06	[-.13, .01]

Note. Coefficients in bold are significant ($p < .01$).

Table 12

Indirect Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Avoidant Attachment at T1 as Predictor, the Respective Relationship Process as Mediator, and Later Relationship Satisfaction as Criterion

Relationship process	Actor-actor			Actor-partner			Partner-actor			Partner-partner		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
Relationship satisfaction at T2												
Responsiveness	-0.22	-0.17	[-.21, -.12]	-0.02	-0.02	[-.05, .01]	-0.06	-0.04	[-.07, -.01]	-0.01	-0.01	[-.01, .003]
Expectations	-0.13	-0.10	[-.13, -.06]	-0.01	-0.01	[-.04, .02]	-0.05	-0.03	[-.06, -.01]	-0.01	-0.00	[-.01, .01]
Self-disclosure	-0.05	-0.04	[-.06, -.02]	-0.01	-0.01	[-.03, .01]	-0.02	-0.01	[-.02, .001]	-0.00	-0.00	[-.01, .003]
Relationship satisfaction at T3												
Responsiveness	-0.19	-0.15	[-.19, -.11]	-0.00	-0.00	[-.03, .03]	-0.05	-0.04	[-.06, -.01]	.00	.00	[-.01, .01]
Expectations	-0.11	-0.09	[-.12, -.05]	-0.01	-0.01	[-.03, .02]	-0.04	-0.03	[-.05, -.01]	-0.00	-0.00	[-.01, .01]
Self-disclosure	-0.05	-0.04	[-.06, -.02]	.00	.00	[-.02, .02]	-0.02	-0.01	[-.02, .001]	.00	.00	[-.01, .01]
Change in relationship satisfaction between T2 and T3												
Responsiveness	-0.09	-0.04	[-.09, .003]	.10	.05	[.003, .09]	-0.02	-0.01	[-.02, .002]	.02	.01	[-.001, .02]
Expectations	-0.05	-0.02	[-.05, .01]	.02	.01	[-.02, .04]	-0.02	-0.01	[-.02, .003]	.01	.00	[-.01, .01]
Self-disclosure	-0.03	-0.01	[-.03, .01]	.03	.02	[-.002, .03]	-0.01	-0.00	[-.01, .002]	.01	.00	[-.002, .01]

Note. In all models, we controlled for relationship duration. The actor and partner effects were constrained to be equal across female and male partners. Coefficients in bold are significant ($p < .01$).

Table 13

Direct Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Neuroticism at T1 as Predictor, the Respective Relationship-Process Variability as Mediator, and Later Relationship Satisfaction as Criterion

Relationship-process variability	Neuroticism → relationship-process variability						Relationship-process variability → relationship satisfaction					
	Actor effect			Partner effect			Actor effect			Partner effect		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
Relationship satisfaction at T2												
Responsiveness	.13	.05	[.02, .08]	.10	.04	[.01, .07]	.13	.23	[.08, .39]	.00	.00	[-.15, .16]
Expectations	.09	.03	[-.002, .06]	.20	.06	[.03, .09]	-.01	-.03	[-.24, .18]	-.08	-.18	[-.38, .03]
Self-disclosure	.04	.01	[-.01, .04]	.03	.01	[-.02, .04]	.03	.08	[-.12, .27]	.02	.04	[-.15, .23]
Relationship satisfaction T3												
Responsiveness	.13	.05	[.02, .08]	.10	.04	[.01, .07]	.07	.14	[-.03, .30]	-.03	-.06	[-.23, .10]
Expectations	.09	.03	[-.002, .06]	.20	.06	[.03, .09]	-.03	-.08	[-.30, .13]	-.08	-.18	[-.39, .04]
Self-disclosure	.04	.01	[-.01, .04]	.04	.01	[-.02, .04]	.07	.16	[-.04, .36]	-.04	-.09	[-.29, .11]
Change in relationship satisfaction between T2 and T3												
Responsiveness	.15	.06	[.03, .09]	.12	.05	[.01, .08]	-.06	-.06	[-.19, .07]	-.08	-.08	[-.21, .05]
Expectations	.11	.04	[.01, .07]	.23	.08	[.04, .11]	-.03	-.03	[-.19, .12]	-.03	-.03	[-.18, .12]
Self-disclosure	.05	.02	[-.01, .04]	.04	.01	[-.01, .04]	.08	.09	[-.05, .23]	-.09	-.12	[-.26, .02]

Note. Coefficients in bold are significant ($p < .01$).

Table 14

Direct Actor and Partner Effects for Actor-Partner Interdependence Mediation Models with Low Self-Esteem at T1 as Predictor, the Respective Relationship-Process Variability as Mediator, and Later Relationship Satisfaction as Criterion

Relationship-process variability	Low self-esteem → relationship-process variability						Relationship-process variability → relationship satisfaction					
	Actor effect			Partner effect			Actor effect			Partner effect		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
	Relationship satisfaction at T2											
Responsiveness	.07	.04	[-.01, .08]	.03	.01	[-.03, .06]	.11	.21	[.06, .36]	-.01	-.02	[-.18, .13]
Expectations	.09	.03	[-.004, .07]	.10	.04	[.004, .08]	-.02	-.05	[-.26, .16]	-.09	-.19	[-.39, .02]
Self-disclosure	.00	.00	[-.03, .04]	.00	.00	[-.03, .03]	.01	.03	[-.16, .23]	-.00	-.01	[-.20, .19]
	Relationship satisfaction T3											
Responsiveness	.07	.04	[-.01, .08]	.03	.01	[-.03, .06]	.06	.11	[-.05, .27]	-.04	-.09	[-.25, .07]
Expectations	.09	.03	[-.004, .07]	.10	.05	[.006, .09]	-.04	-.10	[-.32, .12]	-.09	-.20	[-.41, .01]
Self-disclosure	.00	.00	[-.03, .04]	.00	.00	[-.03, .03]	.05	.12	[-.08, .32]	-.05	-.14	[-.34, .07]
	Change in relationship satisfaction between T2 and T3											
Responsiveness	.08	.04	[-.001, .08]	.03	.02	[-.02, .06]	-.06	-.06	[-.19, .07]	-.08	-.08	[-.21, .05]
Expectations	.10	.04	[-.001, .08]	.12	.06	[.02, .10]	-.02	-.03	[-.18, .13]	-.04	-.05	[-.20, .11]
Self-disclosure	.01	.00	[-.03, .04]	.00	.00	[-.03, .03]	.08	.09	[-.05, .23]	-.09	-.12	[-.26, .02]

Note. Coefficients in bold are significant ($p < .01$).

Table 15

Direct Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Anxious Attachment at T1 as Predictor, the Respective Relationship-Process Variability as Mediator, and Later Relationship Satisfaction as Criterion

Relationship- process variability	Anxious attachment → relationship-process variability						Relationship-process variability → relationship satisfaction					
	Actor effect			Partner effect			Actor effect			Partner effect		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
	Relationship satisfaction at T2											
Responsiveness	.12	.04	[.01, .07]	.07	.02	[-.004, .05]	.10	.18	[.03, .33]	-.03	-.06	[-.21, .10]
Expectations	.21	.05	[.02, .08]	.13	.03	[.01, .06]	.00	.01	[-.20, .22]	-.08	-.16	[-.36, .04]
Self-disclosure	.03	.01	[-.01, .03]	.07	.02	[-.002, .04]	.03	.06	[-.13, .25]	.01	.01	[-.17, .20]
	Relationship satisfaction T3											
Responsiveness	-.12	.04	[.01, .07]	.07	.02	[-.004, .05]	.04	.08	[-.08, .24]	-.06	-.12	[-.29, .04]
Expectations	.20	.05	[.02, .08]	.13	.03	[.01, .06]	-.02	-.04	[-.26, .17]	-.08	-.18	[-.38, .03]
Self-disclosure	.03	.01	[-.01, .03]	.07	.02	[-.002, .04]	.07	.15	[-.05, .34]	-.05	-.11	[-.30, .08]
	Change in relationship satisfaction between T2 and T3											
Responsiveness	.23	.07	[.04, .10]	.17	.06	[.02, .09]	-.07	-.07	[-.20, .07]	-.08	-.08	[-.21, .05]
Expectations	.28	.06	[.04, .09]	.19	.05	[.02, .07]	-.03	-.04	[-.20, .13]	-.04	-.05	[-.21, .11]
Self-disclosure	.05	.01	[-.01, .04]	.08	.02	[.002, .05]	.08	.09	[-.05, .23]	-.09	-.12	[-.26, .03]

Note. Coefficients in bold are significant ($p < .01$).

Table 16

Direct Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Avoidant Attachment at T1 as Predictor, the Respective Relationship-Process Variability as Mediator, and Later Relationship Satisfaction as Criterion

Relationship-process variability	Avoidant attachment → relationship-process variability						Relationship-process variability → relationship satisfaction					
	Actor effect			Partner effect			Actor effect			Partner effect		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
	Relationship satisfaction at T2											
Responsiveness	.17	.07	[.04, .11]	.09	.04	[.001, .07]	.09	.16	[.02, .31]	-.02	-.03	[-.17, .11]
Expectations	.20	.06	[.03, .10]	.11	.03	[-.001, .06]	-.02	-.05	[-.24, .15]	-.09	-.18	[-.37, .01]
Self-disclosure	.11	.04	[.01, .07]	.04	.01	[-.02, .04]	.01	.02	[-.16, .19]	-.01	-.01	[-.19, .16]
	Relationship satisfaction at T3											
Responsiveness	.17	.07	[.04, .11]	.09	.03	[.001, .07]	.04	.07	[-.09, .23]	-.05	-.11	[-.27, .05]
Expectations	.20	.06	[.03, .10]	.10	.03	[-.003, .06]	-.04	-.09	[-.30, .12]	-.10	-.20	[-.40, -.003]
Self-disclosure	.11	.04	[.01, .06]	.04	.01	[-.02, .04]	.05	.11	[-.08, .29]	-.06	-.13	[-.32, .05]
	Change in relationship satisfaction between T2 and T3											
Responsiveness	.21	.10	[.06, .14]	.11	.05	[.01, .09]	-.05	-.05	[-.18, .08]	-.10	-.11	[-.24, .02]
Expectations	.24	.08	[.05, .12]	.13	.04	[.01, .07]	-.03	-.03	[-.20, .13]	-.05	-.05	[-.21, .11]
Self-disclosure	.11	.04	[.01, .07]	.05	.01	[-.01, .04]	.07	.09	[-.06, .23]	-.10	-.13	[-.27, .02]

Note. Coefficients in bold are significant ($p < .01$).

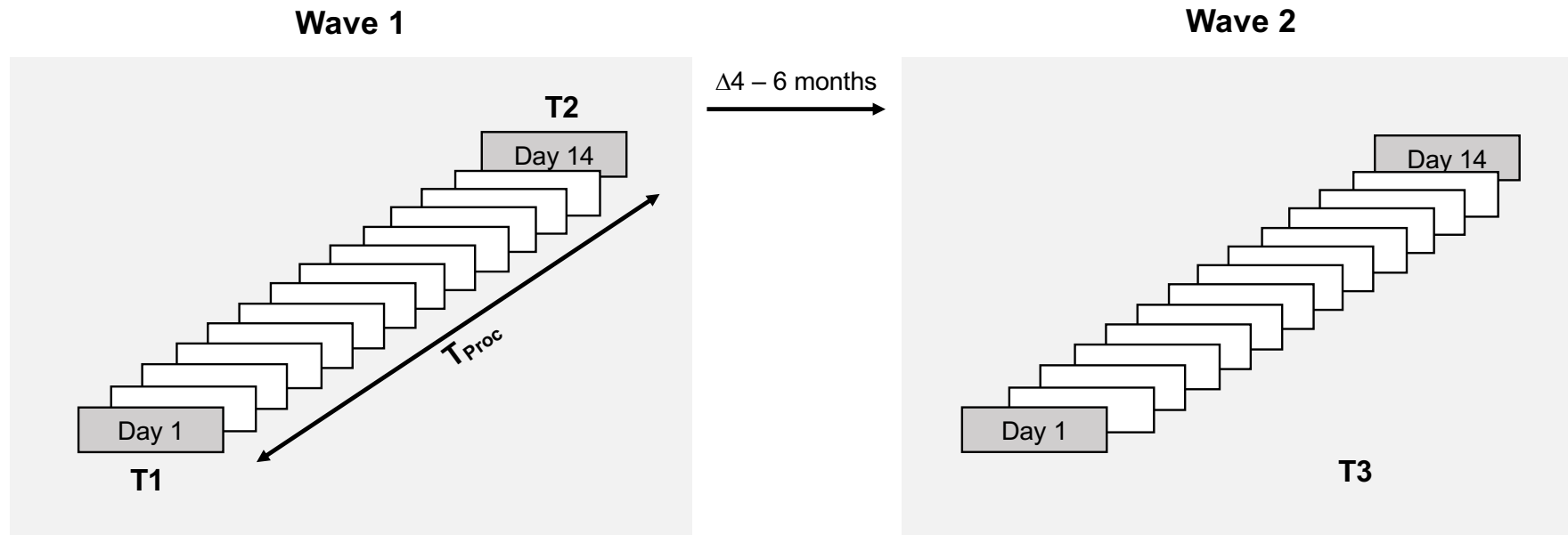


Figure 1. Study design. On Day 1 and Day 14 of waves 1 and 2, participants completed longer questionnaires (shown in grey) to assess their interpersonal vulnerabilities and relationship satisfaction. Day 1 of wave 1 reflects T1 and Day 14 of wave 1 represents T2, while the follow-up measurement occasions in wave 2 represents T3. Between T1 and T2, couple members participated in a diary study to assess their daily perceived partner responsiveness (emotional process), positive expectations (cognitive process), and self-disclosure (behavioral process). These daily measurement occasions represent T_{Proc}.

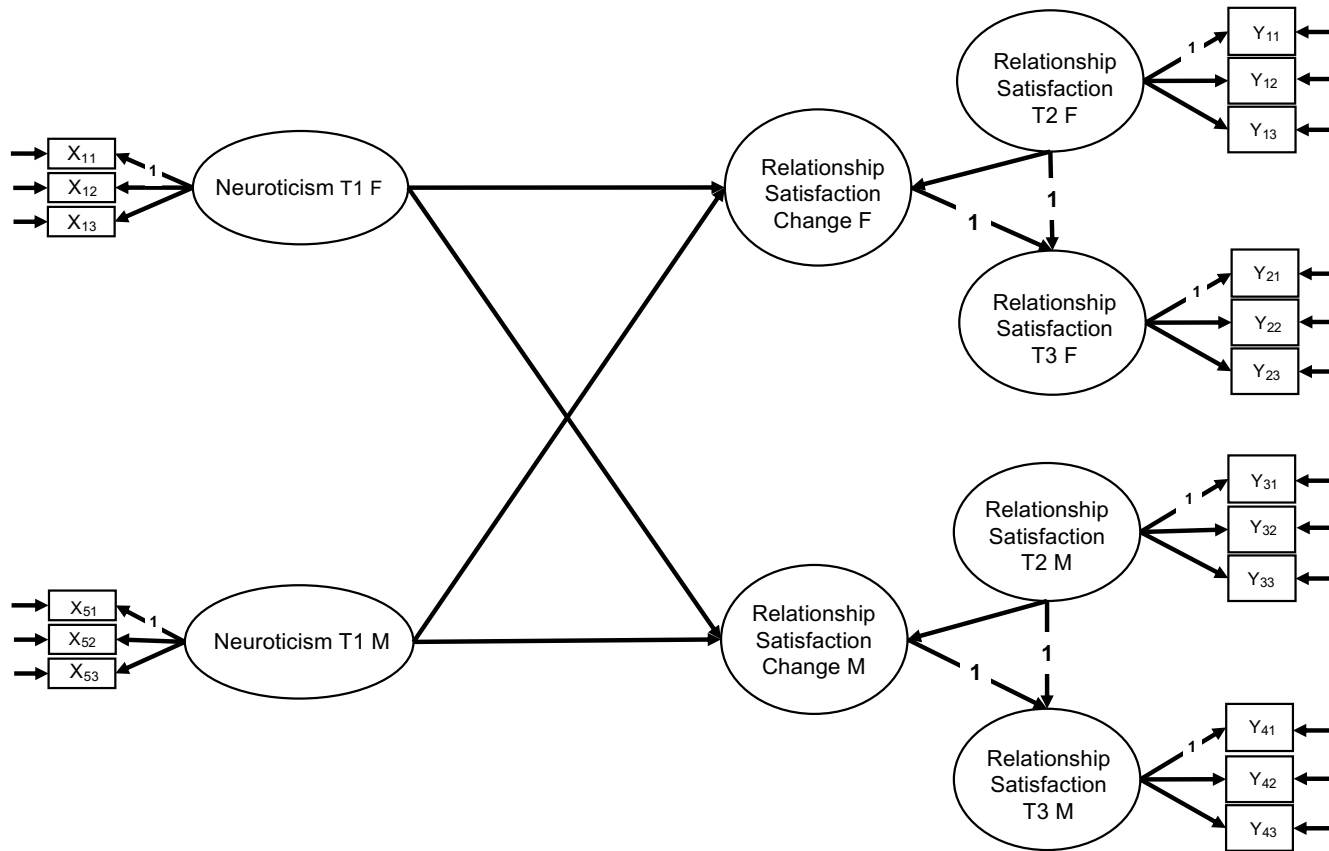


Figure 2. Actor-Partner Interdependence Model for the example of neuroticism predicting change in relationship satisfaction between Time 2 and Time 3. F signifies female partners; M, male partners. For reasons of simplicity, the intercorrelations between error terms are not displayed here.

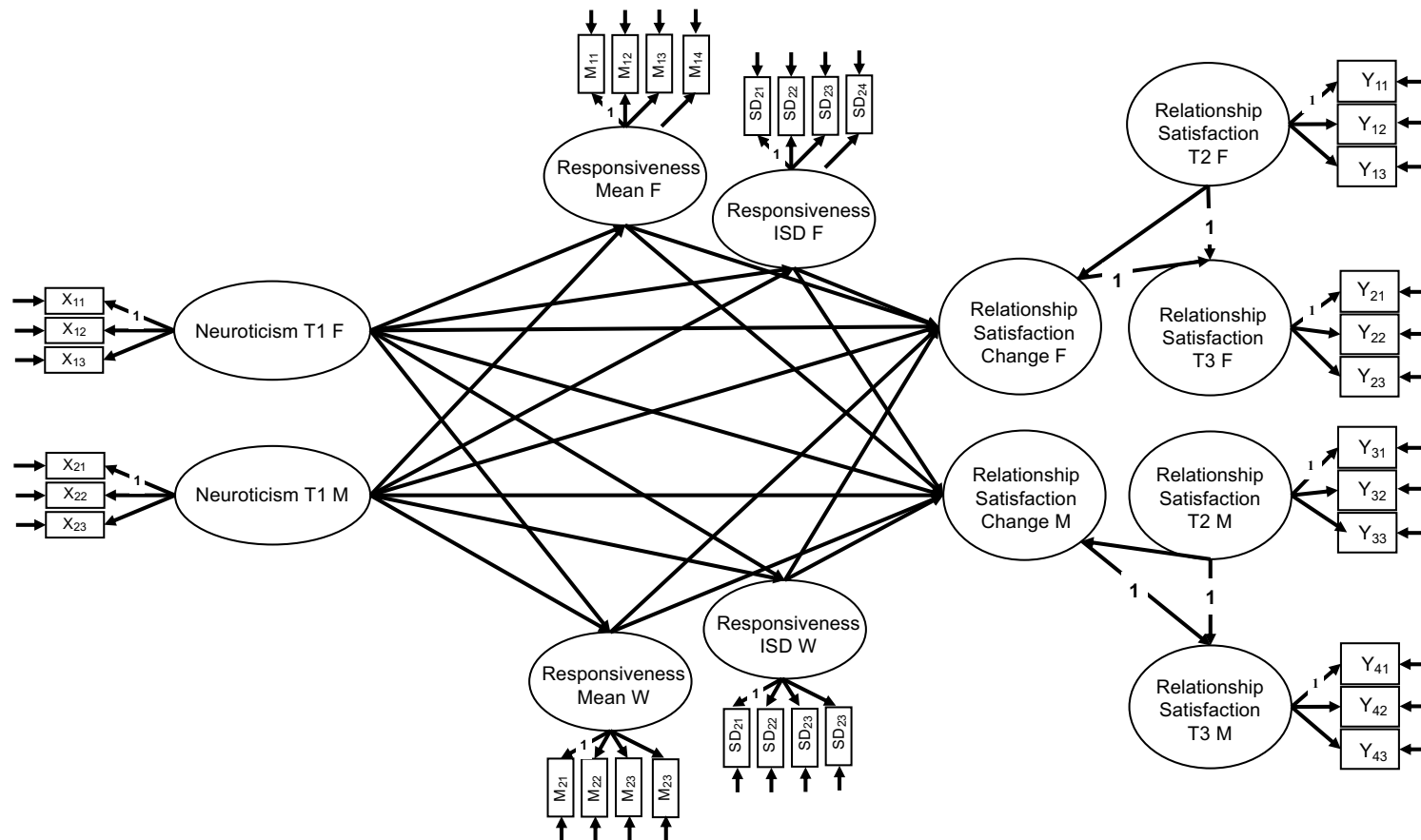


Figure 3. Actor-Partner Interdependence Mediation Model for the example of neuroticism predicting change in relationship satisfaction between Time 2 and Time 3 with daily levels of perceived responsiveness and their day-to-day variability as mediators. F signifies female partners; M, male partners. For reasons of simplicity, the intercorrelations between error terms are not displayed here.

Supplemental Material

Table S1

Model Fits for the Latent Actor–Partner Interdependence Models with the Interpersonal Vulnerability at T1 as Predictor and Relationship Satisfaction as Criterion (Left Side) and with Relationship Satisfaction at T1 as Predictor and the Interpersonal Vulnerability as Criterion (Right Side)

Variable	Relationship satisfaction at T2				Interpersonal vulnerability at T2			
	CFI	RMSEA	SRMR	df	CFI	RMSEA	SRMR	df
Neuroticism	.977	.050	.046	54	.976	.051	.044	54
Low self-esteem	.991	.035	.042	54	.988	.041	.040	54
Anxious attachment	.929	.084	.075	54	.947	.071	.061	54
Avoidant attachment	.961	.064	.049	54	.975	.052	.049	54
	Relationship satisfaction at T3				Interpersonal vulnerability at T3			
Neuroticism	.978	.050	.049	54	.964	.063	.049	54
Low self-esteem	.986	.045	.045	54	.993	.031	.039	54
Anxious attachment	.952	.069	.069	54	.952	.068	.068	54
Avoidant attachment	.968	.059	.051	54	.978	.049	.047	54
	Change in relationship satisfaction between T2 and T3				Change in interpersonal vulnerability between T2 / T3			
Neuroticism	.970	.051	.052	136	.948	.067	.121	136
Low self-esteem	.975	.049	.049	136	.982	.043	.067	142
Anxious attachment	.947	.066	.076	136	.943	.061	.071	131
Avoidant attachment	.966	.054	.054	136	.936	.050	.056	139

Note. CFI = Comparative Fit Index; RMSEA = Root-Mean-Square Error of Approximation; SRMR = Standardized Root Mean Square Residual; *df* = degrees of freedom.

Table S2

Model Fits for the Actor–Partner Interdependence Mediation Models (Perceived Responsiveness as Mediator) with the Interpersonal Vulnerability at T1 as Predictor and Relationship Satisfaction as Criterion (Left Side) and with Relationship Satisfaction at T1 as Predictor and the Interpersonal Vulnerability as Criterion (Right Side)

Variable	CFI	RMSEA	SRMR	<i>df</i>	CFI	RMSEA	SRMR	<i>df</i>
	Relationship satisfaction at T2				Interpersonal vulnerability at T2			
Neuroticism	.971	.046	.045	332	.972	.045	.045	332
Low self-esteem	.974	.044	.046	332	.976	.043	.043	332
Anxious attachment	.959	.053	.063	332	.965	.049	.055	332
Avoidant attachment	.967	.048	.050	332	.970	.046	.049	332
	Relationship satisfaction at T3				Interpersonal vulnerability at T3			
Neuroticism	.971	.045	.044	332	.968	.047	.045	332
Low self-esteem	.973	.045	.046	332	.979	.040	.043	332
Anxious attachment	.963	.051	.061	332	.965	.049	.061	332
Avoidant attachment	.968	.048	.049	332	.972	.045	.049	332
	Change in relationship satisfaction between T2 and T3				Change in interpersonal vulnerability between T2 / T3			
Neuroticism	.939	.060	.155	510	.961	.048	.079	510
Low self-esteem	.942	.060	.161	510	.976	.038	.054	516
Anxious attachment	.936	.060	.081	510	.959	.046	.069	505
Avoidant attachment	.953	.052	.076	510	.964	.044	.059	513

Note. CFI = Comparative Fit Index; RMSEA = Root-Mean-Square Error of Approximation; SRMR = Standardized Root Mean Square Residual; *df* = degrees of freedom.

Table S3

Model Fits for the Actor–Partner Interdependence Mediation Models (Positive Expectations as Mediator) with the Interpersonal Vulnerability at T1 as Predictor and Relationship Satisfaction as Criterion (Left Side) and with Relationship Satisfaction at T1 as Predictor and the Interpersonal Vulnerability as Criterion (Right Side)

Variable	CFI	RMSEA	SRMR	df	CFI	RMSEA	SRMR	df
	Relationship satisfaction at T2				Interpersonal vulnerability at T2			
Neuroticism	.945	.054	.056	234	.944	.055	.056	234
Low self-esteem	.958	.050	.053	234	.960	.049	.050	234
Anxious attachment	.925	.062	.068	234	.935	.057	.060	234
Avoidant attachment	.941	.056	.054	234	.947	.053	.054	234
	Relationship satisfaction at T3				Interpersonal vulnerability at T3			
Neuroticism	.948	.053	.057	234	.937	.058	.058	234
Low self-esteem	.958	.050	.054	234	.958	.051	.050	234
Anxious attachment	.934	.058	.067	234	.936	.057	.064	234
Avoidant attachment	.943	.055	.055	234	.951	.051	.054	234
	Change in relationship satisfaction between T2 and T3				Change in interpersonal vulnerability between T2 / T3			
Neuroticism	.923	.061	.120	388	.934	.056	.095	388
Low self-esteem	.931	.060	.123	388	.962	.045	.062	394
Anxious attachment	.931	.063	.089	388	.933	.051	.069	383
Avoidant attachment	.935	.056	.070	388	.944	.048	.059	391

Note. CFI = Comparative Fit Index; RMSEA = Root-Mean-Square Error of Approximation; SRMR = Standardized Root Mean Square Residual; *df* = degrees of freedom.

Table S4

Model Fits for the Actor–Partner Interdependence Mediation Models (Self-Disclosure as Mediator) with the Interpersonal Vulnerability at T1 as Predictor and Relationship Satisfaction as Criterion (Left Side) and with Relationship Satisfaction at T1 as Predictor and the Interpersonal Vulnerability as Criterion (Right Side)

Variable	CFI	RMSEA	SRMR	<i>df</i>	CFI	RMSEA	SRMR	<i>df</i>
	Relationship satisfaction at T2				Interpersonal vulnerability at T2			
Neuroticism	.976	.039	.039	236	.974	.040	.040	236
Low self-esteem	.981	.036	.039	236	.978	.039	.038	236
Anxious attachment	.954	.053	.057	236	.958	.050	.052	236
Avoidant attachment	.968	.045	.043	236	.971	.042	.042	236
	Relationship satisfaction at T3				Interpersonal vulnerability at T3			
Neuroticism	.976	.039	.040	236	.968	.045	.042	236
Low self-esteem	.979	.039	.040	236	.980	.037	.038	236
Anxious attachment	.963	.047	.054	236	.963	.047	.053	236
Avoidant attachment	.970	.043	.043	236	.972	.042	.042	236
	Change in relationship satisfaction between T2 and T3				Change in interpersonal vulnerability between T2 / T3			
Neuroticism	.960	.046	.097	390	.959	.047	.082	390
Low self-esteem	.964	.045	.096	390	.977	.037	.052	396
Anxious attachment	.948	.052	.086	390	.954	.046	.059	385
Avoidant attachment	.965	.043	.057	390	.962	.043	.052	393

Note. CFI = Comparative Fit Index; RMSEA = Root-Mean-Square Error of Approximation; SRMR = Standardized Root Mean Square Residual; *df* = degrees of freedom.

Table S5

Measurement Invariance Across Couple Members in Neuroticism, Low Self-Esteem, Anxious Attachment, Avoidant Attachment, and Relationship Satisfaction

Measure	Model	χ^2	CFI	RMSEA	Δdf	$\Delta\chi^2$	ΔCFI	$\Delta RMSEA$	<i>p</i> -value
Neuroticism									
	Configural invariance	12.403	1.000	.020					
	Metric invariance	15.582	1.000	.014	4	3.179	.000	.006	.528
	Scalar invariance	24.026	.999	.024	4	8.444	.001	.010	.077
Low self-esteem									
	Configural invariance	10.760	1.000	.011					
	Metric invariance	14.432	1.000	.007	4	3.673	.000	.004	.452
	Scalar invariance	16.942	1.000	.000	4	2.510	.000	.007	.643
Anxious attachment									
	Configural invariance	15.748	.998	.031					
	Metric invariance	25.275	.996	.037	4	9.527	.002	.006	.049
	Scalar invariance	38.142	.993	.043	4	12.868	.003	.007	.012
Avoidant attachment									
	Configural invariance	22.002	.996	.045					
	Metric invariance	27.822	.996	.040	4	5.820	.001	.004	.213
	Scalar invariance	105.010	.973	.090	4	77.187	.023	.049	< .001
Relationship satisfaction									
	Configural invariance	14.201	.999	.026					
	Metric invariance	19.078	.999	.025	4	4.877	.000	.002	.300
	Scalar invariance	25.886	.999	.027	4	6.808	.001	.002	.146

Note. χ^2 = Chi-Square; CFI = Comparative Fit Index; RMSEA = Root-Mean-Square Error of Approximation; *df* = change in degrees of freedom; *p*-values in bold are significant ($p < .05$).

Table S6

Measurement Invariance Across T2 and T3 in Neuroticism, Low Self-Esteem, Anxious Attachment, Avoidant Attachment, and Relationship Satisfaction

Measure	Model	χ^2	CFI	RMSEA	Δdf	$\Delta\chi^2$	ΔCFI	$\Delta RMSEA$	<i>p</i> -value
Neuroticism									
	Configural invariance	0.000	1.000	.000					
	Metric invariance	0.217	1.000	.000	0.217	2	.000	.000	.897
	Scalar invariance	7.418	.999	.027	7.201	2	.001	.027	.027
Low self-esteem									
	Configural invariance	0.000	1.000	.000					
	Metric invariance	1.518	1.000	.000	1.518	2	.000	.000	.468
	Scalar invariance	3.278	1.000	.000	1.761	2	.000	.000	.415
Anxious attachment									
	Configural invariance	0.000	1.000	.000					
	Metric invariance	2.099	1.000	.006	2.099	2	.000	.006	.350
	Scalar invariance	8.768	.997	.031	6.669	2	.003	.025	.036
Avoidant attachment									
	Configural invariance	0.000	1.000	.000					
	Metric invariance	0.688	1.000	.000	0.688	2	.000	.000	.709
	Scalar invariance	5.607	.999	.018	4.919	2	.001	.018	.085
Relationship satisfaction									
	Configural invariance	0.000	1.000	.000					
	Metric invariance	1.792	1.000	.000	1.792	2	.000	.000	.408
	Scalar invariance	9.182	.999	.033	7.389	2	.001	.033	.025

Note. χ^2 = Chi-Square; CFI = Comparative Fit Index; RMSEA = Root-Mean-Square Error of Approximation; *df* = change in degrees of freedom; *p*-values in bold are significant ($p < .05$).

Table S7

Indirect Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Neuroticism at T1 as Predictor, the Respective Relationship-Process Variability as Mediator, and Later Relationship Satisfaction as Criterion

Relationship-process variability	Actor-actor			Actor-partner			Partner-actor			Partner-partner		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
Relationship satisfaction at T2												
Responsiveness	.02	.01	[.001, .023]	.00	.00	[-.01, .01]	.01	.01	[.00, .02]	.00	.00	[-.01, .01]
Expectations	-.00	-.00	[-.01, .01]	-.01	-.01	[-.01, .003]	-.00	-.00	[-.01, .01]	-.01	-.01	[-.02, .003]
Self-disclosure	.00	.00	[-.002, .004]	.00	.00	[-.002, .003]	.00	.00	[-.002, .004]	.00	.00	[-.002, .003]
Relationship satisfaction at T3												
Responsiveness	.01	.01	[-.003, .02]	-.00	-.00	[-.01, .01]	.01	.01	[-.002, .01]	-.00	-.00	[-.01, .004]
Expectations	-.00	-.00	[-.01, .004]	-.01	-.01	[-.01, .003]	-.01	-.01	[-.02, .01]	-.01	-.01	[-.03, .003]
Self-disclosure	.00	.00	[-.003, .01]	-.00	-.00	[-.01, .002]	.00	.00	[-.003, .01]	-.00	-.00	[-.004, .002]
Change in relationship satisfaction between T2 and T3												
Responsiveness	-.01	-.00	[-.01, .004]	-.01	-.01	[-.01, .003]	-.01	-.00	[-.01, .004]	-.01	-.00	[-.01, .003]
Expectations	-.00	-.00	[-.01, .01]	-.00	-.00	[-.01, .01]	-.01	-.00	[-.01, .01]	-.01	-.00	[-.01, .01]
Self-disclosure	.00	.00	[-.002, .01]	-.01	-.00	[-.01, .002]	.00	.00	[-.002, .004]	-.00	-.00	[-.01, .002]

Note. In all models, we controlled for relationship duration. The actor and partner effects were constrained to be equal across female and male partners. Coefficients in bold are significant ($p < .01$).

Table S8

Indirect Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Low Self-Esteem at T1 as Predictor, the Respective Relationship-Process Variability as Mediator, and Later Relationship Satisfaction as Criterion

Relationship- process variability	Actor-actor			Actor-partner			Partner-actor			Partner-partner		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
Relationship satisfaction at T2												
Responsiveness	.01	.01	[-.003, .02]	-0.00	-0.00	[-.01, .01]	.00	.00	[-.01, .01]	.00	.00	[-.003, .002]
Expectations	-0.00	-0.00	[-.01, .01]	-0.01	-0.01	[-.02, .003]	-0.00	-0.00	[-.01, .01]	-0.01	-0.01	[-.02, .003]
Self-disclosure	.00	.00	[-.001, .001]	.00	.00	[.00, .00]	.00	.00	[-.001, .001]	.00	.00	[.00, .00]
Relationship satisfaction at T3												
Responsiveness	.00	.00	[-.004, .01]	-0.00	-0.00	[-.01, .004]	.00	.00	[-.003, .01]	-0.00	-0.00	[-.01, .003]
Expectations	-0.00	-0.00	[-.01, .01]	-0.01	-0.01	[-.02, .004]	-0.00	-0.01	[-.02, .01]	-0.01	-0.01	[-.02, .003]
Self-disclosure	.00	.00	[-.004, .004]	.00	.00	[-.01, .004]	.00	.00	[-.004, .004]	.00	.00	[-.004, .01]
Change in relationship satisfaction between T2 and T3												
Responsiveness	-0.01	-0.00	[-.01, .003]	-0.01	-0.00	[-.01, .003]	-0.00	-0.00	[-.01, .002]	-0.00	-0.00	[-.01, .003]
Expectations	-0.00	-0.00	[-.01, .01]	-0.00	-0.00	[-.01, .01]	-0.00	-0.00	[-.01, .01]	-0.00	-0.00	[-.01, .01]
Self-disclosure	.00	.00	[-.003, .003]	-0.00	.00	[-.004, .004]	.00	.00	[-.003, .003]	.00	.00	[-.004, .004]

Note. In all models, we controlled for relationship duration. The actor and partner effects were constrained to be equal across female and male partners. Coefficients in bold are significant ($p < .01$).

Table S9

Indirect Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Anxious Attachment at T1 as Predictor, the Respective Relationship-Process Variability as Mediator, and Later Relationship Satisfaction as Criterion

Relationship- process variability	Actor-actor			Actor-partner			Partner-actor			Partner-partner		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
Relationship satisfaction at T2												
Responsiveness	.01	.01	[-.001, .02]	-.00	-.00	[-.01, .004]	.01	.00	[-.002, .01]	-.00	-.00	[-.01, .003]
Expectations	.00	.00	[-.01, .01]	-.01	-.01	[-.02, .002]	.00	.00	[-.01, .01]	-.01	-.01	[-.01, .002]
Self-disclosure	.00	.00	[-.002, .003]	.00	.00	[-.002, .002]	.00	.00	[-.003, .01]	.00	.00	[-.004, .004]
Relationship satisfaction at T3												
Responsiveness	.01	.00	[-.004, .01]	-.01	-.01	[-.01, .002]	.00	.00	[-.003, .01]	-.00	-.00	[-.01, .002]
Expectations	-.00	-.00	[-.01, .01]	-.01	-.01	[-.02, .002]	-.00	-.00	[-.01, .01]	-.01	-.01	[-.01, .002]
Self-disclosure	.00	.00	[-.003, .005]	-.00	-.00	[-.004, .002]	.01	.00	[-.002, .01]	-.00	-.00	[-.01, .002]
Change in relationship satisfaction between T2 and T3												
Responsiveness	-.02	-.01	[-.01, .01]	-.02	-.01	[-.02, .004]	-.01	-.00	[-.01, .004]	-.01	-.01	[-.01, .003]
Expectations	-.01	-.00	[-.01, .01]	-.01	-.00	[-.01, .01]	-.01	-.00	[-.01, .01]	-.01	-.00	[-.01, .01]
Self-disclosure	.00	.00	[-.002, .004]	-.01	-.00	[-.01, .002]	.01	.00	[-.002, .01]	-.01	-.00	[-.01, .001]

Note. In all models, we controlled for relationship duration. The actor and partner effects were constrained to be equal across female and male partners. Coefficients in bold are significant ($p < .01$).

Table S10

Indirect Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Avoidant Attachment at T1 as Predictor, the Respective Relationship-Process Variability as Mediator, and Later Relationship Satisfaction as Criterion

Relationship- process variability	Actor-actor			Actor-partner			Partner-actor			Partner-partner		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
Relationship satisfaction at T2												
Responsiveness	.02	.01	[.00, .02]	-.00	-.00	[-.01, .01]	.01	.01	[-.002, .01]	-.00	-.00	[-.01, .004]
Expectations	-.00	-.00	[-.02, .01]	-.01	-.01	[-.03, .002]	-.00	-.00	[-.01, .01]	-.01	-.01	[-.01, .002]
Self-disclosure	.00	.00	[-.01, .01]	-.00	-.00	[-.01, .01]	.00	.00	[-.002, .002]	.00	.00	[-.002, .002]
Relationship satisfaction at T3												
Responsiveness	.01	.01	[-.01, .02]	-.01	-.01	[-.02, .004]	.00	.00	[-.003, .01]	-.01	-.00	[-.01, .002]
Expectations	-.01	-.01	[-.02, .01]	-.02	-.01	[-.03, .001]	-.00	-.00	[-.01, .004]	-.01	-.01	[-.01, .002]
Self-disclosure	.01	.00	[-.004, .01]	-.01	-.01	[-.01, .003]	.00	.00	[-.002, .01]	-.00	-.00	[-.01, .002]
Change in relationship satisfaction between T2 and T3												
Responsiveness	-.01	-.00	[-.02, .01]	-.02	-.01	[-.02, .003]	-.01	-.00	[-.01, .004]	-.01	-.01	[-.01, .002]
Expectations	-.01	-.00	[-.02, .01]	-.01	-.00	[-.02, .01]	-.00	-.00	[-.01, .01]	-.01	-.00	[-.01, .01]
Self-disclosure	.01	.00	[-.003, .01]	-.01	-.01	[-.01, .002]	.00	.00	[-.002, .004]	-.01	-.00	[-.01, .002]

Note. In all models, we controlled for relationship duration. The actor and partner effects were constrained to be equal across female and male partners. Coefficients in bold are significant ($p < .01$).

Table S11

Direct Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Relationship Satisfaction at T1 as Predictor, the Respective Relationship Process as Mediator, and Later Neuroticism as Criterion

Relationship process	Relationship satisfaction → relationship process						Relationship process → neuroticism					
	Actor effect			Partner effect			Actor effect			Partner effect		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
	Neuroticism at T2											
Responsiveness	.59	.67	[.57, .76]	.06	.06	[-.02, .16]	-.07	-.10	[-.29, .09]	.02	.03	[-.16, .21]
Expectations	.56	.63	[.52, .74]	.05	.05	[-.05, .16]	.01	.02	[-.15, .19]	-.02	-.03	[-.20, .15]
Self-disclosure	.33	.30	[.22, .39]	.04	.04	[-.05, .12]	.02	.04	[-.12, .20]	-.02	-.04	[-.20, .12]
	Neuroticism at T3											
Responsiveness	.59	.67	[.57, .76]	.06	.07	[-.02, .16]	-.01	-.01	[-.19, .17]	-.04	-.05	[-.23, .13]
Expectations	.56	.63	[.52, .74]	.05	.06	[-.05, .16]	.01	.02	[-.15, .19]	-.08	-.10	[-.26, .07]
Self-disclosure	.33	.30	[.22, .39]	.04	.04	[-.05, .12]	.08	.13	[-.03, .29]	-.09	-.14	[-.30, .02]
	Change in neuroticism between T2 and T3											
Responsiveness	.59	.67	[.57, .76]	.06	.07	[-.02, .16]	.16	.08	[-.02, .19]	-.10	-.05	[-.15, .05]
Expectations	.56	.63	[.52, .74]	.05	.06	[-.04, .16]	.01	.01	[-.09, .10]	-.11	-.05	[-.15, .05]
Self-disclosure	.33	.30	[.22, .39]	.04	.04	[-.05, .12]	.14	.09	[-.004, .18]	-.15	-.09	[-.18, -.004]

Note. Coefficients in bold are significant ($p < .01$).

Table S12

Indirect Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Relationship Satisfaction at T1 as Predictor, the Respective Relationship Process as Mediator, and Later Neuroticism as Criterion

Relationship process	Actor-actor			Actor-partner			Partner-actor			Partner-partner		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
Neuroticism at T2												
Responsiveness	-.04	-.07	[-.19, .06]	.01	.02	[-.11, .14]	-.00	-.01	[-.02, .01]	.00	.00	[-.01, .01]
Expectations	.01	.01	[-.10, .12]	-.01	-.02	[-.12, .09]	.00	.00	[-.01, .01]	-.00	-.00	[-.01, .01]
Self-disclosure	.01	.01	[-.04, .06]	-.01	-.01	[-.06, .04]	.00	.00	[-.01, .01]	-.00	-.00	[-.01, .01]
Neuroticism at T3												
Responsiveness	-.00	-.01	[-.13, .12]	-.02	-.03	[-.15, .09]	.00	-.00	[-.01, .01]	-.00	-.00	[-.02, .01]
Expectations	.01	.01	[-.09, .12]	-.04	-.06	[-.17, .05]	.00	.00	[-.01, .01]	-.00	-.01	[-.02, .01]
Self-disclosure	.03	.04	[-.01, .09]	-.03	-.04	[-.09, .01]	.00	.01	[-.01, .02]	-.00	-.01	[-.02, .01]
Change in neuroticism between T2 and T3												
Responsiveness	.10	.05	[-.02, .12]	-.06	-.03	[-.10, .04]	.01	.01	[-.004, .02]	-.01	-.00	[-.01, .01]
Expectations	.01	.00	[-.06, .07]	-.06	-.03	[-.09, .03]	.00	.00	[-.01, .01]	-.01	-.00	[-.01, .01]
Self-disclosure	.04	.03	[-.002, .05]	-.05	-.03	[-.06, .00]	.01	.00	[-.01, .01]	-.01	-.00	[-.01, .01]

Note. In all models, we controlled for relationship duration. The actor and partner effects were constrained to be equal across female and male partners. Coefficients in bold are significant ($p < .01$).

Table S13

Direct Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Relationship Satisfaction at T1 as Predictor, the Respective Relationship-Process Variability as Mediator, and Later Neuroticism as Criterion

Relationship-process variability	Relationship satisfaction → relationship-process variability						Relationship-process variability → neuroticism					
	Actor effect			Partner effect			Actor effect			Partner effect		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
Neuroticism at T2												
Responsiveness	-.22	-.12	[-.17, -.07]	-.12	-.06	[-.11, -.01]	.04	.10	[.41, -.21]	-.01	-.04	[-.34, .27]
Expectations	-.34	-.15	[-.20, -.09]	-.06	-.02	[-.07, .03]	-.03	-.11	[-.48, .27]	.17	.52	[.15, .90]
Self-disclosure	-.13	-.06	[-.10, -.02]	-.05	-.02	[-.06, .02]	.02	.06	[-.26, .39]	-.01	-.05	[-.38, .27]
Neuroticism at T3												
Responsiveness	-.22	-.12	[-.17, -.07]	-.12	-.06	[-.11, -.01]	.03	.09	[-.21, .39]	-.02	-.06	[-.36, .24]
Expectations	-.35	-.15	[-.20, -.09]	-.06	-.02	[-.07, .03]	-.05	-.16	[-.53, .20]	.13	.39	[.03, .76]
Self-disclosure	-.13	-.06	[-.10, -.02]	-.05	-.02	[-.06, .02]	.04	.14	[-.18, .46]	-.07	-.27	[-.59, .05]
Change in neuroticism between T2 and T3												
Responsiveness	-.22	-.12	[-.17, -.07]	-.12	-.06	[-.11, -.01]	.01	.01	[-.16, .18]	-.00	-.00	[-.18, .17]
Expectations	-.35	-.14	[-.19, -.09]	-.06	-.03	[-.07, .02]	-.04	-.06	[-.28, .16]	-.04	-.05	[-.26, .17]
Self-disclosure	-.13	-.06	[-.10, -.02]	-.05	-.02	[-.06, .02]	.04	.05	[-.13, .24]	-.17	-.23	[-.42, -.05]

Note. Coefficients in bold are significant ($p < .01$).

Table S14

Indirect Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Relationship Satisfaction at T1 as Predictor, the Respective Relationship-Process Variability as Mediator, and Later Neuroticism as Criterion

Relationship- process variability	Actor-actor			Actor-partner			Partner-actor			Partner-partner		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
Neuroticism at T2												
Responsiveness	-.01	-.01	[-.05, .03]	.00	.00	[-.03, .04]	-.00	-.01	[-.03, .01]	.00	.00	[-.02, .02]
Expectations	.01	.02	[-.04, .07]	-.05	-.08	[-.14, -.02]	.00	.00	[-.01, .01]	-.01	-.01	[-.04, .02]
Self-disclosure	-.00	-.00	[-.02, .02]	.00	.00	[-.02, .02]	-.00	-.00	[-.01, .01]	.00	.00	[-.01, .01]
Neuroticism at T3												
Responsiveness	-.01	-.01	[-.05, .03]	.01	.01	[-.03, .04]	-.00	-.01	[-.03, .01]	.00	.00	[-.02, .02]
Expectations	.02	.02	[-.03, .08]	-.04	-.06	[-.11, .00]	.00	.00	[-.01, .02]	-.01	-.01	[-.03, .01]
Self-disclosure	-.01	-.01	[-.03, .01]	.01	.02	[-.01, .04]	-.00	-.00	[-.01, .01]	.00	.01	[-.01, .02]
Change in neuroticism between T2 and T3												
Responsiveness	-.00	-.00	[-.02, .02]	.00	.00	[-.02, .02]	-.00	.00	[-.01, .01]	.00	.00	[-.01, .01]
Expectations	.02	.01	[-.02, .04]	.01	.01	[-.02, .04]	.00	.00	[-.01, .01]	.00	.00	[-.01, .01]
Self-disclosure	-.01	-.00	[-.01, .01]	.02	.01	[-.001, .03]	-.00	-.00	[-.01, .003]	.01	.01	[-.01, .02]

Note. In all models, we controlled for relationship duration. The actor and partner effects were constrained to be equal across female and male partners. Coefficients in bold are significant ($p < .01$).

Table S15

Direct Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Relationship Satisfaction at T1 as Predictor, the Respective Relationship Process as Mediator, and Later Low Self-Esteem as Criterion

Relationship process	Relationship satisfaction → relationship process						Relationship process → low self-esteem					
	Actor effect			Partner effect			Actor effect			Partner effect		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
	Low self-esteem at T2											
Responsiveness	.59	.67	[.57, .76]	.06	.07	[-.02, .15]	-.16	-.17	[-.29, -.05]	-.03	-.03	[-.15, .10]
Expectations	.56	.63	[.52, .74]	.05	.05	[-.05, .16]	-.02	-.02	[-.13, .10]	-.08	-.08	[-.20, .04]
Self-disclosure	.33	.31	[.22, .39]	.04	.04	[-.05, .12]	-.04	-.05	[-.15, .06]	-.05	-.06	[-.17, .05]
	Low self-esteem at T3											
Responsiveness	.59	.67	[.57, .76]	.06	.07	[-.02, .15]	-.15	-.14	[-.26, -.02]	.00	.00	[-.12, .12]
Expectations	.56	.63	[.52, .74]	.05	.05	[-.05, .16]	-.03	-.03	[-.14, .08]	-.07	-.06	[-.18, .05]
Self-disclosure	.33	.30	[.22, .39]	.04	.04	[-.05, .12]	-.04	-.05	[-.15, .06]	-.03	-.04	[-.14, .07]
	Change in low self-esteem between T2 and T3											
Responsiveness	.60	.68	[.58, .77]	.06	.06	[-.03, .15]	.02	.01	[-.07, .08]	.10	.04	[-.03, .11]
Expectations	.56	.63	[.52, .74]	.06	.06	[-.04, .16]	-.03	-.01	[-.08, .05]	.04	.02	[-.05, .08]
Self-disclosure	.33	.31	[.22, .39]	.04	.04	[-.05, .12]	-.01	-.00	[-.07, .06]	.05	.02	[-.04, .08]

Note. Coefficients in bold are significant ($p < .01$).

Table S16

Indirect Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Relationship Satisfaction at T1 as Predictor, the Respective Relationship Process as Mediator, and Later Low Self-Esteem as Criterion

Relationship process	Actor-actor			Actor-partner			Partner-actor			Partner-partner		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
Low self-esteem at T2												
Responsiveness	-0.10	-0.11	[-.20, -.03]	-.02	-.02	[-.10, .06]	-.01	-.01	[-.03, .01]	-.00	-.00	[-.01, .01]
Expectations	-.01	-.01	[-.08, .06]	-.05	-.05	[-.13, .02]	-.00	-.00	[-.01, .01]	-.01	-.00	[-.01, .01]
Self-disclosure	-.01	-.01	[-.05, .02]	-.02	-.02	[-.05, .02]	-.00	-.00	[-.01, .004]	-.00	-.00	[-.01, .004]
Low self-esteem at T3												
Responsiveness	-0.09	-0.10	[-.18, -.01]	.00	.00	[-.08, .08]	-.01	-.01	[-.02, .01]	.00	.00	[-.01, .01]
Expectations	-.02	-.02	[-.09, .05]	-.04	-.04	[-.11, .03]	-.00	-.00	[-.01, .01]	-.00	-.00	[-.01, .01]
Self-disclosure	-.01	-.01	[-.05, .02]	-.01	-.01	[-.04, .02]	-.00	-.00	[-.01, .004]	-.00	-.00	[-.01, .004]
Change in low self-esteem between T2 and T3												
Responsiveness	.01	.00	[-.04, .05]	.06	.03	[-.02, .07]	.00	.00	[-.004, .01]	.01	.00	[-.003, .01]
Expectations	-.02	-.01	[-.05, .03]	.02	.01	[-.03, .05]	-.00	-.00	[-.01, .003]	.00	.00	[-.003, .01]
Self-disclosure	-.00	-.00	[-.02, .02]	.01	.01	[-.01, .03]	.00	.00	[-.002, .002]	.00	.00	[-.002, .004]

Note. In all models, we controlled for relationship duration. The actor and partner effects were constrained to be equal across female and male partners. Coefficients in bold are significant ($p < .01$).

Table S17

Direct Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Relationship Satisfaction at T1 as Predictor, the Respective Relationship-Process Variability as Mediator, and Later Low Self-Esteem as Criterion

Relationship-process variability	Relationship satisfaction → relationship-process variability						Relationship-process variability → low self-esteem					
	Actor effect			Partner effect			Actor effect			Partner effect		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
	Low self-esteem at T2											
Responsiveness	-.22	-.12	[-.17, -.07]	-.12	-.06	[-.11, -.01]	-.04	-.09	[-.30, .11]	-.08	-.18	[-.39, .02]
Expectations	-.35	-.14	[-.20, -.09]	-.06	-.02	[-.07, .03]	-.02	-.05	[-.30, .20]	.04	.10	[-.17, .36]
Self-disclosure	-.13	-.06	[-.10, -.02]	-.05	-.02	[-.06, .02]	-.03	-.08	[-.30, .14]	-.06	-.16	[-.38, .06]
	Low self-esteem at T3											
Responsiveness	-.22	-.12	[-.17, -.07]	-.12	-.06	[-.11, -.01]	-.02	-.05	[-.24, .15]	-.07	-.16	[-.35, .04]
Expectations	-.35	-.14	[-.20, -.09]	-.06	-.02	[-.07, .03]	-.02	-.06	[-.31, .18]	.04	.09	[-.16, .34]
Self-disclosure	-.13	-.06	[-.10, -.02]	-.05	-.02	[-.06, .02]	-.03	-.08	[-.29, .14]	-.07	-.18	[-.39, .04]
	Change in low self-esteem between T2 and T3											
Responsiveness	-.22	-.12	[-.17, -.07]	-.11	-.06	[-.11, -.01]	.05	.05	[-.07, .16]	.02	.01	[-.10, .13]
Expectations	-.35	-.14	[-.19, -.09]	-.06	-.03	[-.07, .02]	-.01	-.01	[-.16, .14]	-.01	-.01	[-.15, .14]
Self-disclosure	-.13	-.06	[-.10, -.02]	-.04	-.02	[-.06, .03]	.01	.01	[-.12, .13]	-.02	-.02	[-.15, .10]

Note. Coefficients in bold are significant ($p < .01$).

Table S18

Indirect Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Relationship Satisfaction at T1 as Predictor, the Respective Relationship-Process Variability as Mediator, and Later Low Self-Esteem as Criterion

Relationship- process variability	Actor-actor			Actor-partner			Partner-actor			Partner-partner		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
Low self-esteem at T2												
Responsiveness	.01	.01	[-.01, .04]	.02	.02	[-.004, .05]	.01	.01	[-.01, .02]	.01	.01	[-.01, .03]
Expectations	.01	.01	[-.03, .04]	-.01	-.01	[-.05, .02]	.00	.00	[-.01, .01]	-.00	-.00	[-.01, .01]
Self-disclosure	.00	.01	[-.01, .02]	.01	.01	[-.01, .02]	.00	.00	[-.004, .01]	.00	.00	[-.01, .01]
Low self-esteem at T3												
Responsiveness	.01	.01	[-.02, .03]	.02	.02	[-.01, .04]	.00	.00	[-.01, .02]	.01	.01	[-.01, .02]
Expectations	.01	.01	[-.03, .04]	-.01	-.01	[-.05, .02]	.00	.00	[-.01, .01]	-.00	-.00	[-.01, .01]
Self-disclosure	.00	.00	[-.01, .02]	.01	.01	[-.004, .03]	.00	.00	[-.004, .01]	.00	.00	[-.01, .01]
Change in low self-esteem between T2 and T3												
Responsiveness	-.01	-.01	[-.02, .01]	-.00	-.00	[-.02, .01]	-.01	-.00	[-.01, .01]	-.00	-.00	[-.01, .01]
Expectations	.00	.00	[-.02, .02]	.00	.00	[-.02, .02]	.00	.00	[-.003, .004]	.00	.00	[-.003, .004]
Self-disclosure	-.00	.00	[-.01, .01]	.00	.00	[-.01, .01]	.00	.00	[-.002, .002]	.00	.00	[-.002, .003]

Note. In all models, we controlled for relationship duration. The actor and partner effects were constrained to be equal across female and male partners. Coefficients in bold are significant ($p < .01$).

Table S19

Direct Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Relationship Satisfaction at T1 as Predictor, the Respective Relationship Process as Mediator, and Later Anxious Attachment as Criterion

Relationship process	Relationship satisfaction → relationship process						Relationship process → anxious attachment					
	Actor effect			Partner effect			Actor effect			Partner effect		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
	Anxious attachment at T2											
Responsiveness	.59	.67	[.57, .76]	.06	.06	[-.02, .15]	-.25	-.42	[-.63, -.21]	-.02	-.03	[-.24, .18]
Expectations	.57	.62	[.51, .73]	.05	.05	[-.05, .16]	-.13	-.23	[-.42, -.03]	.08	.12	[-.08, .32]
Self-disclosure	.33	.30	[.21, .39]	.04	.04	[-.05, .12]	-.02	-.05	[-.23, .14]	-.01	-.03	[-.21, .16]
	Anxious attachment at T3											
Responsiveness	.59	.67	[.57, .77]	.06	.07	[-.02, .15]	-.15	-.23	[-.43, -.04]	-.03	-.05	[-.24, .15]
Expectations	.56	.63	[.52, .74]	.05	.05	[-.05, .16]	-.05	-.08	[-.25, .10]	.04	.06	[-.13, .23]
Self-disclosure	.33	.30	[.22, .39]	.04	.04	[-.05, .12]	.04	.07	[-.10, .24]	-.08	-.15	[-.32, .02]
	Change in anxious attachment between T2 and T3											
Responsiveness	.60	.68	[.58, .77]	.06	.07	[-.02, .15]	.00	.00	[-.17, .17]	-.01	-.01	[-.18, .16]
Expectations	.57	.63	[.52, .74]	.05	.05	[-.05, .15]	.05	.05	[-.10, .20]	-.02	-.02	[-.18, .14]
Self-disclosure	.33	.30	[.22, .39]	.04	.04	[-.05, .12]	.08	.10	[-.05, .24]	-.13	-.15	[-.30, -.003]

Note. Coefficients in bold are significant ($p < .01$).

Table S20

Indirect Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Relationship Satisfaction at T1 as Predictor, the Respective Relationship Process as Mediator, and Later Anxious Attachment as Criterion

Relationship process	Actor-actor			Actor-partner			Partner-actor			Partner-partner		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
Anxious attachment at T2												
Responsiveness	-0.15	-0.28	[-.43, -.13]	-0.01	-0.02	[-.16, .12]	-0.02	-0.03	[-.07, .01]	-0.00	-0.00	[-.02, .01]
Expectations	-0.08	-0.14	[-.26, -.02]	.05	.08	[-.05, .20]	-0.01	-0.01	[-.04, .01]	.00	.01	[-.01, .02]
Self-disclosure	-0.01	-0.01	[-.07, .04]	-0.01	-0.01	[-.06, .05]	-0.00	-0.00	[-.01, .01]	-0.00	-0.00	[-.01, .01]
Anxious attachment at T3												
Responsiveness	-0.09	-0.16	[-.29, -.03]	-0.02	-0.03	[-.16, .10]	-0.01	-0.02	[-.04, .01]	-0.00	-0.00	[-.02, .01]
Expectations	-0.03	-0.05	[-.16, .06]	.02	.03	[-.08, .15]	-0.00	-0.00	[-.02, .01]	.00	.00	[-.01, .01]
Self-disclosure	.01	.02	[-.03, .07]	-0.03	-0.05	[-.10, .01]	.00	.00	[-.01, .01]	-0.00	-0.01	[-.02, .01]
Change in anxious attachment between T2 and T3												
Responsiveness	.00	.00	[-.11, .11]	-0.01	-0.01	[-.12, .11]	.00	.00	[-.01, .01]	-0.00	-0.00	[-.01, .01]
Expectations	.03	.03	[-.07, .13]	-0.01	-0.01	[-.11, .09]	.00	.00	[-.01, .01]	-0.00	-0.00	[-.01, .01]
Self-disclosure	.03	.03	[-.02, .07]	-0.05	-0.05	[-.09, .001]	.00	.00	[-.01, .01]	-0.01	-0.01	[-.02, .01]

Note. In all models, we controlled for relationship duration. The actor and partner effects were constrained to be equal across female and male partners. Coefficients in bold are significant ($p < .01$).

Table S21

Direct Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Relationship Satisfaction at T1 as Predictor, the Respective Relationship-Process Variability as Mediator, and Later Anxious Attachment as Criterion

Relationship-process variability	Relationship satisfaction → relationship-process variability						Relationship-process variability → anxious attachment					
	Actor effect			Partner effect			Actor effect			Partner effect		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
	Anxious attachment at T2											
Responsiveness	-.22	-.12	[-.17, -.07]	-.12	-.06	[-.11, -.01]	-.07	-.25	[-.60, .10]	-.04	-.16	[-.50, .20]
Expectations	-.35	-.14	[-.19, -.09]	-.06	-.02	[-.07, .03]	.03	.14	[-.29, .57]	.0	.18	[-.27, .63]
Self-disclosure	-.13	-.06	[-.10, -.02]	-.05	-.02	[-.06, .02]	-.03	-.14	[-.51, .23]	.01	.04	[-.33, .42]
	Anxious attachment at T3											
Responsiveness	-.22	-.12	[-.17, -.07]	-.12	-.06	[-.11, -.01]	.03	.09	[-.22, .41]	-.05	-.16	[-.48, .16]
Expectations	.35	.14	[-.19, -.09]	-.06	-.02	[-.07, .03]	.07	.32	[-.07, .71]	-.00	-.01	[-.42, .39]
Self-disclosure	-.13	-.06	[-.10, -.02]	-.04	-.02	[-.06, .02]	.02	.06	[-.27, .40]	-.01	-.05	[-.39, .29]
	Change in anxious attachment between T2 and T3											
Responsiveness	-.22	-.12	[-.17, -.07]	-.12	-.06	[-.11, -.01]	.12	.25	[-.03, .53]	-.02	-.04	[-.32, .24]
Expectations	-.36	-.14	[-.20, -.09]	-.06	-.02	[-.07, .03]	.08	.21	[-.13, .55]	-.06	-.13	[-.49, .23]
Self-disclosure	-.13	-.06	[-.10, -.01]	-.05	-.02	[-.06, .02]	.06	.15	[-.14, .45]	-.03	-.09	[-.38, .21]

Note. Coefficients in bold are significant ($p < .01$).

Table S22

Indirect Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Relationship Satisfaction at T1 as Predictor, the Respective Relationship-Process Variability as Mediator, and Later Anxious Attachment as Criterion

Relationship- process variability	Actor-actor			Actor-partner			Partner-actor			Partner-partner		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
Anxious attachment at T2												
Responsiveness	.02	.03	[-.01, .07]	.01	.02	[-.02, .06]	.01	.02	[-.01, .04]	.01	.01	[-.01, .03]
Expectations	-.01	-.02	[-.08, .04]	-.02	-.03	[-.09, .04]	-.00	-.00	[-.02, .01]	-.00	-.00	[-.02, .01]
Self-disclosure	.00	.01	[-.01, .03]	-.00	-.00	[-.02, .02]	.00	.00	[-.01, .01]	.00	-.00	[-.01, .01]
Anxious attachment at T3												
Responsiveness	-.01	-.01	[-.05, .03]	.01	.02	[-.02, .06]	-.00	-.01	[-.03, .01]	.01	.01	[-.01, .03]
Expectations	-.03	-.05	[-.10, .01]	.00	.00	[-.06, .06]	-.00	-.01	[-.03, .01]	.00	.00	[-.01, .01]
Self-disclosure	-.00	-.00	[-.02, .02]	.00	.00	[-.02, .02]	-.00	-.00	[-.01, .01]	.00	.00	[-.01, .01]
Change in anxious attachment between T2 and T3												
Responsiveness	-.03	-.03	[-.07, .01]	.01	.01	[-.03, .04]	-.01	-.02	[-.04, .01]	.00	.00	[-.02, .02]
Expectations	-.03	-.03	[-.08, .02]	.02	.02	[-.03, .07]	-.00	-.01	[-.02, .01]	.00	.00	[-.01, .01]
Self-disclosure	-.01	-.01	[-.03, .01]	.01	.01	[-.01, .02]	-.00	-.00	[-.01, .01]	.00	.00	[-.01, .01]

Note. In all models, we controlled for relationship duration. The actor and partner effects were constrained to be equal across female and male partners. Coefficients in bold are significant ($p < .01$).

Table S23

Direct Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Relationship Satisfaction at T1 as Predictor, the Respective Relationship Process as Mediator, and Later Avoidant Attachment as Criterion

Relationship process	Relationship satisfaction → relationship process						Relationship process → avoidant attachment					
	Actor effect			Partner effect			Actor effect			Partner effect		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
Avoidant attachment at T2												
Responsiveness	.58	.67	[.58, .77]	.06	.07	[-.02, .16]	-.30	-.35	[-.49, -.20]	-.01	-.02	[-.16, .12]
Expectations	.56	.63	[.52, .74]	.05	.06	[-.05, .16]	-.17	-.21	[-.34, -.07]	-.04	-.05	[-.18, .08]
Self-disclosure	.33	.31	[.22, .40]	.04	.04	[-.05, .12]	-.23	-.33	[-.46, -.19]	-.05	-.07	[-.20, .05]
Avoidant attachment at T3												
Responsiveness	.59	.67	[.58, .77]	.06	.07	[-.02, .16]	-.28	-.35	[-.51, -.19]	.03	.04	[-.11, .19]
Expectations	.56	.63	[.52, .74]	.05	.06	[-.05, .16]	-.13	-.16	[-.31, -.01]	.03	.04	[-.11, .18]
Self-disclosure	.33	.31	[.22, .39]	.04	.04	[-.05, .12]	-.20	-.31	[-.45, -.16]	-.05	-.07	[-.21, .07]
Change in avoidant attachment between T2 and T3												
Responsiveness	.62	.72	[.62, .81]	.04	.05	[-.04, .14]	-.18	-.14	[-.28, .01]	.14	.10	[-.04, .24]
Expectations	.58	.65	[.54, .76]	.05	.05	[-.05, .15]	-.04	-.03	[-.16, .10]	.13	.09	[-.03, .22]
Self-disclosure	.36	.34	[.25, .43]	.03	.02	[-.06, .11]	-.08	-.07	[-.20, .05]	.01	.01	[-.11, .13]

Note. Coefficients in bold are significant ($p < .01$).

Table S24

Indirect Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Relationship Satisfaction at T1 as Predictor, the Respective Relationship Process as Mediator, and Later Avoidant Attachment as Criterion

Relationship process	Actor-actor			Actor-partner			Partner-actor			Partner-partner		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
Avoidant attachment at T2												
Responsiveness	-.18	-.23	[-.33, -.13]	-.01	-.01	[-.11, .08]	-.02	-.02	[-.06, .01]	-.00	-.00	[-.01, .01]
Expectations	-.10	-.13	[-.22, -.04]	-.02	-.03	[-.11, .05]	-.01	-.01	[-.04, .01]	-.00	-.00	[-.01, .01]
Self-disclosure	-.08	-.10	[-.15, -.05]	-.01	-.02	[-.06, .02]	-.01	-.01	[-.04, .02]	-.00	-.00	[-.01, .004]
Avoidant attachment at T3												
Responsiveness	-.16	-.23	[-.34, -.13]	.02	.03	[-.08, .13]	-.02	-.02	[-.06, .01]	.00	.00	[-.01, .01]
Expectations	-.07	-.10	[-.20, -.01]	.01	.02	[-.07, .11]	-.01	-.01	[-.03, .01]	.00	.00	[-.01, .01]
Self-disclosure	-.07	-.09	[-.14, -.05]	-.01	-.02	[-.06, .02]	-.01	-.01	[-.04, .02]	-.00	-.00	[-.01, .01]
Change in avoidant attachment between T2 and T3												
Responsiveness	-.11	-.10	[-.20, .004]	.08	.07	[-.03, .17]	-.01	-.01	[-.02, .01]	.01	.01	[-.01, .02]
Expectations	-.02	-.02	[-.11, .07]	.07	.06	[-.02, .15]	-.00	-.00	[-.01, .01]	.01	.01	[-.01, .02]
Self-disclosure	-.03	-.03	[-.07, .02]	.00	.00	[-.04, .04]	-.00	-.00	[-.01, .01]	.00	.00	[-.003, .003]

Note. In all models, we controlled for relationship duration. The actor and partner effects were constrained to be equal across female and male partners. Coefficients in bold are significant ($p < .01$).

Table S25

Direct Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Relationship Satisfaction at T1 as Predictor, the Respective Relationship-Process Variability as Mediator, and Later Avoidant Attachment as Criterion

Relationship-process variability	Relationship satisfaction → relationship-process variability						Relationship-process variability → avoidant attachment					
	Actor effect			Partner effect			Actor effect			Partner effect		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
Avoidant attachment at T2												
Responsiveness	-.21	-.12	[-.17, -.07]	-.12	-.06	[-.11, -.01]	-.07	-.16	[-.39, .08]	.01	.03	[-.21, .26]
Expectations	-.34	-.14	[-.19, -.09]	-.06	-.03	[-.07, .02]	-.05	-.14	[-.46, .17]	.06	.17	[-.12, .47]
Self-disclosure	-.13	-.06	[-.10, -.02]	-.05	-.02	[-.06, .02]	-.10	-.30	[-.56, -.04]	-.03	-.08	[-.33, .18]
Avoidant attachment at T3												
Responsiveness	-.22	-.12	[-.17, -.07]	-.12	-.06	[-.11, -.01]	-.03	-.08	[-.34, .18]	.01	.02	[-.24, .28]
Expectations	-.35	-.14	[-.19, -.09]	-.06	-.02	[-.07, .03]	.00	.00	[-.34, .35]	.11	.32	[-.01, .64]
Self-disclosure	-.13	-.06	[-.10, -.02]	-.05	-.02	[-.06, .02]	-.09	-.28	[-.56, .01]	-.02	-.06	[-.34, .22]
Change in avoidant attachment between T2 and T3												
Responsiveness	-.22	-.12	[-.17, -.07]	-.12	-.07	[-.12, -.02]	.01	.01	[-.21, .24]	.01	.02	[-.20, .25]
Expectations	-.34	-.14	[-.19, -.09]	-.07	-.03	[-.08, .02]	.04	.08	[-.21, .37]	.11	.20	[-.09, .48]
Self-disclosure	-.12	-.06	[-.10, -.01]	-.05	-.02	[-.07, .02]	-.03	-.06	[-.30, .19]	.00	.01	[-.24, .25]

Note. Coefficients in bold are significant ($p < .01$).

Table S26

Indirect Actor and Partner Effects for Actor–Partner Interdependence Mediation Models with Relationship Satisfaction at T1 as Predictor, the Respective Relationship-Process Variability as Mediator, and Later Avoidant Attachment as Criterion

Relationship- process variability	Actor-actor			Actor-partner			Partner-actor			Partner-partner		
	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI	β	<i>b</i>	99% CI
Avoidant attachment at T2												
Responsiveness	.01	.02	[-.01, .05]	-.00	-.00	[-.03, .03]	.01	.01	[-.01, .03]	-.00	-.00	[-.02, .01]
Expectations	.02	.02	[-.03, .07]	-.02	-.02	[-.07, .02]	.00	.00	[-.01, .01]	-.00	-.00	[-.02, .01]
Self-disclosure	.01	.02	[-.004, .04]	.00	.00	[-.01, .02]	.01	.01	[-.01, .02]	.00	.00	[-.01, .01]
Avoidant attachment at T3												
Responsiveness	.01	.01	[-.02, .04]	-.00	-.00	[-.03, .03]	.00	.01	[-.01, .02]	-.00	-.00	[-.02, .02]
Expectations	.00	.00	[-.05, .05]	-.03	-.04	[-.09, .01]	.00	.00	[-.01, .01]	-.01	-.01	[-.02, .01]
Self-disclosure	.01	.02	[-.01, .04]	.00	.00	[-.01, .02]	.00	.01	[-.01, .02]	.00	.00	[-.01, .01]
Change in avoidant attachment between T2 and T3												
Responsiveness	-.00	-.00	[-.03, .03]	-.00	-.00	[-.03, .03]	.00	.01	[-.01, .02]	-.00	-.00	[-.02, .02]
Expectations	-.01	-.01	[-.05, .03]	-.03	-.03	[-.07, .01]	.00	.00	[-.01, .01]	-.01	-.01	[-.02, .01]
Self-disclosure	.00	.00	[-.01, .02]	.00	.00	[-.01, .01]	.00	.01	[-.01, .02]	.00	.00	[-.01, .01]

Note. In all models, we controlled for relationship duration. The actor and partner effects were constrained to be equal across female and male partners. Coefficients in bold are significant ($p < .01$).

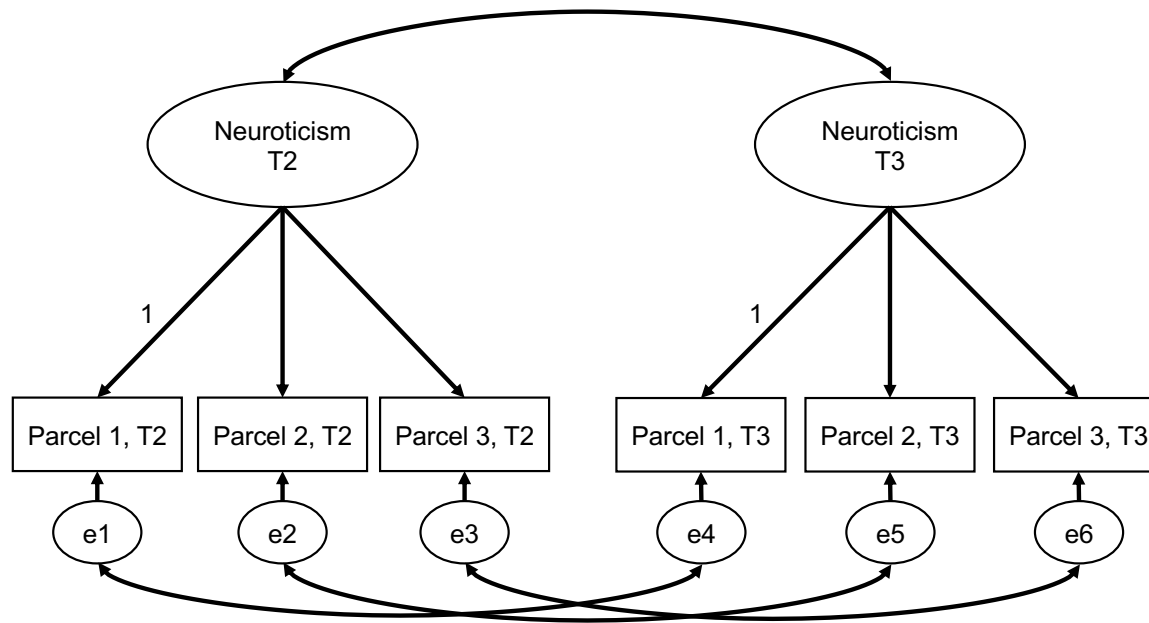


Figure S1. Confirmatory factor analysis with the example of neuroticism at T2 and T3 to test measurement invariance for female and male couple members.

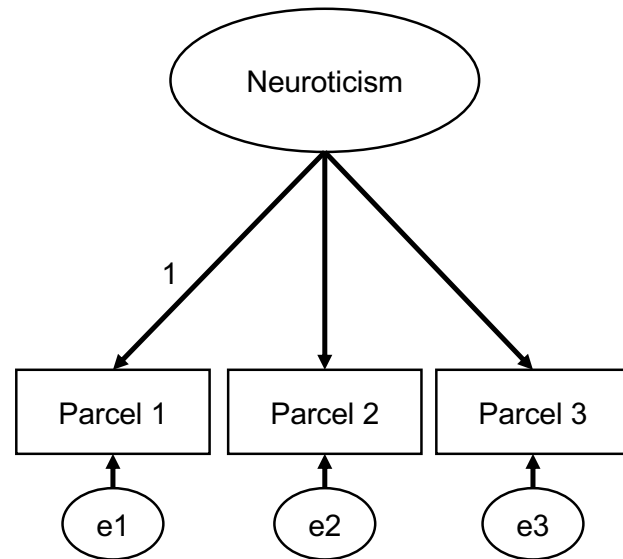


Figure S2. Confirmatory factor analysis with the example of neuroticism to test measurement invariance across T2 and T3.

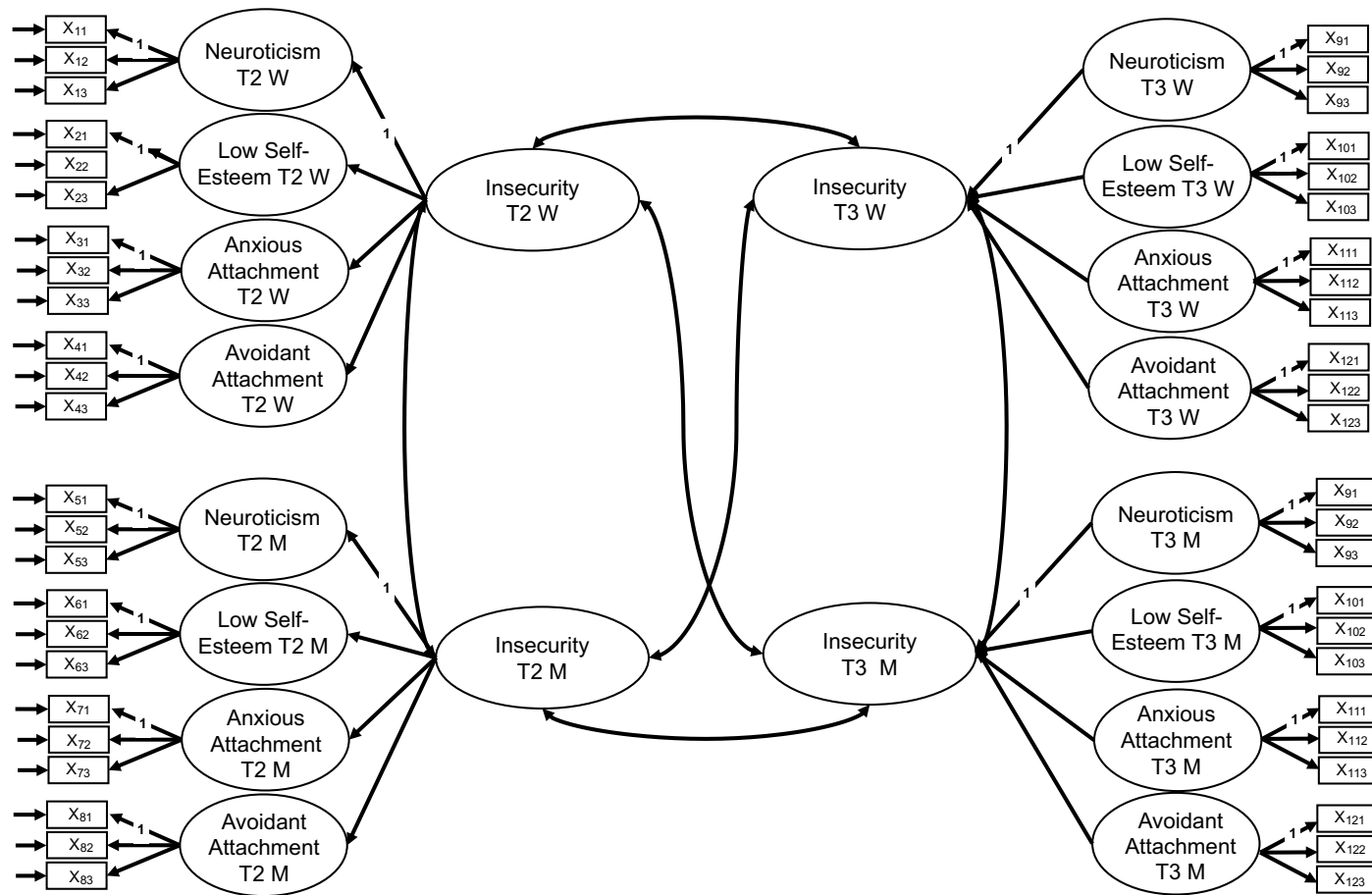


Figure S3. Confirmatory factor analysis testing second-order latent insecurity factors for both couple members at Time 2 and Time 3. F signifies female partners; M, male partners. For reasons of simplicity, the intercorrelations between error terms are not displayed here.

APPENDIX F: Manual for Relationship Narrative Interviews

Relationship Narrative Interview (RNI)

- How could you love and have no story to tell? -

Manual

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Notes to Interviewer

(1) Next to each question is included a typical amount of time that the participant should take to respond.

(2) Text in (*italicized parentheticals*) presents alternative ways to ask a question in case the primary wording doesn't elicit a response. If participants provide a response to the question as it is in its primary form, then there is no need to ask the italicized parenthetical version(s) of that question.

(3) A [[PAUSE]] indicates that the interviewer should pause before proceeding with the rest of the prompt. This pause is meant to (1) let the participant digest the part of the prompt just read to them, and/or (2) allow the participant to respond to a question before asking them more questions.

1. INTRODUCTION

This is an interview about the story of your current relationship. Imagine the story of your relationship written as a book or novel, with you and your partner as its protagonists (*main characters*). As a social scientist, I am interested in hearing this story, including parts of the past as you remember them and the future as you imagine it. The story is selective; it does not include everything that has ever happened in your relationship. Instead, I will ask you to focus on a few key scenes in your relationship. There are no right or wrong answers to my questions. Instead, your task is simply to tell me about some of the most important things that have happened in your relationship and how you imagine your relationship developing in the future. I will guide you through the interview so that we finish it all in about one to two hours. Please know that my purpose in doing this interview is not to figure out what is working well or not working well in your relationship. Nor should you think of this interview as a "therapy session". The interview is for research purposes only, and its main goal is to hear your relationship story. As social scientists, my colleagues and I collect people's relationship stories in order to understand the different ways in which people in our culture and in other cultures experience and understand their relationships. Everything you say in this interview is voluntary and confidential. I think you will enjoy the interview. Do you have any questions?

2. YOUR RELATIONSHIP**a. Beginning [1-2 minutes]**

Every relationship story is unique, and each has its own unique beginning. How did your relationship begin? When and where did you meet your partner? [[PAUSE]] What was the first characteristic of your partner that raised your attention? [[PAUSE]] How long ago was this?

Thank you.

b. Early Scene [2-4 minutes]

Thinking about your relationship story from its beginning, I'd like you to focus on a particular scene: when you first realized or decided that you want to fully commit to this relationship. [[PAUSE]] Please describe this scene for me. Where and when was this? Who was there? What were you doing? [[PAUSE]] What factors led you to this realization or decision to commit? [[PAUSE]] What do you think this scene says about your relationship? [[PAUSE]] What do you think it says about you as a partner?

c. Storyline [1-2 minutes]

I want to ask you now about the plot outline of your relationship story. The outline won't include all the details of your relationship, but it will provide a sense of how your relationship has gotten to where it is now. As the storyteller here, it may help to think of the different stages of your relationship story, and to think of the main characters in those stages. Also, please say a few words about how the different stages of this story are connected, and how your relationship story progresses from one stage to the next. In the next section, I will ask you more details about specific scenes and moments in your relationship, so please keep your descriptions here relatively brief, so the outline takes only a couple of minutes.

Thank you.

3. KEY SCENES

Now that you have described the overall plot outline for your relationship, I would like you to focus in on a few key scenes that stand out in this story. A key scene would be an event or specific incident that took place at a particular time and place. Consider a key scene to be a moment in your relationship story that stands out for a particular reason – perhaps because it was especially pleasant or unpleasant, particularly vivid, important, or memorable. This may sound like a lot of questions, but don't worry, I will repeat them for each specific scene, and you can always ask me to repeat the questions. I would like to ask you about four scenes in particular, and for each of these four key events, I ask that you describe in detail what happened, when and where it happened, who was involved, and what you were thinking and feeling in the event. In addition, I will ask that you tell me why you think this particular scene is important or significant in your relationship. What does the scene say about your relationship? What does it say about who you are as a partner? For these questions, please be specific.

First, we will consider a high point.

a. High Point [2-5 minutes]

Please describe a scene, episode, or moment in your relationship that stands out as an especially positive experience. This might be the high point of your entire relationship, or else an especially happy, joyous, exciting, or wonderful moment in the story. [[PAUSE]] Please describe this high point scene in detail. What happened, when and where, and who was involved? [[PAUSE]] What were you thinking and feeling? (*Thinking back to this specific memory, what emotions do you remember experiencing during this episode?*) [[PAUSE]] Please say a word or two about why you view this particular moment as a high point. [[PAUSE]] What may this scene say about your relationship? [[PAUSE]] What may it say about you as a partner?

b. Low Point [2-5 minutes]

Now instead of focusing on the high point, please think back over your entire relationship and identify a scene that stands out as a low point, if not the lowest point, in your relationship story. Even though this event is unpleasant, I would appreciate your providing as much detail as you can about it. What

happened in the event, where and when, and who was involved? [[PAUSE]] What were you thinking and feeling? [[PAUSE]] Please say a word or two about why you view this particular moment as a low point. [[PAUSE]] What may this scene say about your relationship? [[PAUSE]] What may it say about you as a partner?

Thank you for sharing that.

c. Turning Point [2-5 minutes]

In looking back over your relationship, it may be possible to identify certain key moments that stand out as turning points - episodes that marked an important change in your relationship story or you as a partner. Please identify a particular episode in your relationship story that you now see as a turning point in your relationship. [[PAUSE]] *(This might be a time when things seemed to be headed in one direction but then ended up in a different, unexpected, way.) (If you cannot identify a key turning point that stands out clearly, please describe some event in your relationship wherein you went through an important change of some kind.)* Again, for this event please describe what happened, where and when, and who was involved. [[PAUSE]] What were you thinking and feeling during this scene? [[PAUSE]] Also, please say a word or two about what you think this event says about your relationship. [[PAUSE]] What may it say about you as a partner?

d. Ordinary Scene [2-4 minutes]

While the story of your relationship contains high points, low points, and turning points, relationships often include more than just these climactic scenes. If your story were to include an ordinary or general scene that is typical for your relationship, what would this scene look like? *(What is a typical, everyday scene that occurs in your relationship?)* [[PAUSE]] Who is present and what are you doing? [[PAUSE]] How frequently does this type of scene occur in your relationship? [[PAUSE]] What do you think this scene may say about your relationship? [[PAUSE]] What does it say about who you are as a partner?

4. SEXUAL SCENES

I am now going to ask you some questions that relate to your sexual relationship with your partner, and about how this aspect of your relationship fits in with the rest of your relationship story. Even though your sexual relationship with your partner might be a private part of your relationship and difficult to discuss in an interview, I would appreciate you providing as much detail as you're comfortable with. *[if they say they are not comfortable with this]: (I understand that this topic might be uncomfortable to discuss, and that is why we emphasize these questions during the consent process. In case this eases some of your concerns, I'll remind you that this interview is confidential and your name will be removed from the transcript. Still, I know this can be difficult to talk about, so please know that I would appreciate you answering as much of the questions that you feel OK with, and that you can always decide to skip a question or part of a question. [[PAUSE]] Would it be OK if I asked you the questions?)*

a. Importance of Sex [2-4 minutes]

Sex and sexuality can play a significant role in people's romantic relationships, and the significance of sex varies from person to person, and from couple to couple. What role does your sexual relationship with your partner play in your relationship story? (*How does sex fit into your relationship with your partner?*)

Thank you. Now, as in the previous section, I'm going to ask you about a few specific scenes. First, we'll look at a sexual high point.

b. Sexual High Point [2-5 minutes]

Looking back over your current relationship, please describe a sexual scene, episode, or moment that stands out to you as an especially positive experience. This might be the sexual high point of your entire relationship, or else an especially happy, gratifying, exciting, or wonderful sexual moment in your story. [[PAUSE]] In describing this scene, please tell me what happened, when and where, and who was involved. [[PAUSE]] What were you thinking and feeling during this scene? [[PAUSE]] Why do you view this particular scene as gratifying or a high point? [[PAUSE]] Also, what may this scene say about your relationship? [[PAUSE]] What may it say about you as a partner?

Thank you.

c. Sexual Low Point [2-5 minutes]

Now instead of focusing on the sexual high point, please think back over your entire relationship and identify a sexual scene that stands out as a low point, if not the lowest sexual point, in your relationship story. Even though this event is unpleasant, I would appreciate your providing as much detail as you can about it. [[PAUSE]] What happened in the event, where and when, who was involved? [[PAUSE]] What were you thinking and feeling? [[PAUSE]] Why do you view this particular moment as a low sexual point? [[PAUSE]] Also, what may this scene say about your relationship? [[PAUSE]] What may it say about you as a partner?

Thank you.

d. Sexual Turning Point [2-5 minutes]

Previously, I asked you to describe a turning point in your relationship story. Now I want to ask you specifically about a sexual turning point. In looking back over your relationship, can you identify any key moments that stand out as sexual turning points? If so, please identify a particular sexual episode in your relationship story that you now see as a turning point in your relationship. [[PAUSE]] (*A sexual turning point might be an episode that marked an important change in a sexual aspect of your relationship story or you as a partner.*) (*If you cannot identify a key sexual turning point that stands out clearly, please describe some event in your relationship that marked an important change in the intimacy and closeness that you experience with your partner.*) Again, for this event please describe what happened, where and when, and who was involved. [[PAUSE]] What were you thinking and feeling? [[PAUSE]] Also, please say a word or two about what you think this event says about your relationship. [[PAUSE]] What may it say about you as a partner?

Thank you. The next question is the last one that I'll ask specifically about your sexual relationship with your partner.

e. Sexual Communication [2-3 minutes]

Are you able to discuss your sexual feelings, desires, and difficulties with your partner? Please describe a scene where you had such a discussion with your partner. When and where was this? What was the conversation about? [[PAUSE]] What were you thinking and feeling, both during the conversation and directly afterwards? [[PAUSE]] Please describe what you think this scene may say about your relationship. [[PAUSE]] What may it say about you as a partner?

Thank you for your answers to these questions. Next, I'm going to ask you some questions about the future of your relationship.

5. THE NEXT CHAPTER

a. The Next Chapter [1-2 minutes]

Your relationship story includes key scenes from your past, as you have described them, and it includes how you see or imagine your future as a couple. Please describe what you see to be the next chapter in your relationship. Please say also a few words about how your relationship gets from the current chapter to this next one.

b. Dreams and Hopes [1-2 minutes]

Please describe your dreams or hopes for the future of your relationship. What are your dreams for your relationship story?

Thank you.

c. Shared Goals [1-2 minutes]

Do you and your partner have a common goal or a mission that you follow together? If so, please describe this goal, and how you and your partner pursue this goal together. [[PAUSE]] What do you think is the significance of this shared goal in your relationship story?

Thank you.

6. CHALLENGES

a. Single Greatest Challenge [1-3 minutes]

Characters in stories always face a challenge. Looking back over your entire relationship, what do you now consider to be the single greatest challenge your relationship has faced? Please describe this challenge and how it developed. [[PAUSE]] How did you deal with this challenge? [[PAUSE]] What is the significance of this challenge for your relationship story?

b. Near-breakup [1-3 minutes]

In many stories, the protagonists find themselves in unfamiliar or threatening situations, not knowing if they might make it out safely. Have there been times when you felt your relationship story might be

coming to an end? Please describe such a time. Who or what threatened your relationship, and what kept your relationship alive?

Thank you for sharing. We're going to switch gears.

7. PERSONAL DEVELOPMENT

Now I want to ask a few questions about how you, as one of the protagonists in your relationship story, have grown or been impacted by your relationship with your partner.

a. Self-expansion [1-2 minutes]

From all the things that you might have learned from your relationship with your partner, which lesson do you consider most important? [[PAUSE]] Why do you consider this to be the most important lesson? [[PAUSE]] How did you come to learn it? *(Can you think of a time when you had this insight or thought about this lesson? What do you remember about this time? What was happening, or what were you doing, just before you had this insight?)*

b. Perspective on Love [1 minute]

Characters can change in considerable ways throughout the course of a story. Has this relationship changed the way you think about love? Please explain.

c. Upsides and Downsides [1 minute]

Relationships have upsides and downsides. What is the most satisfying aspect for you about being in a relationship? [[PAUSE]] What is the most unsatisfying aspect for you about being in a relationship?

Thank you.

8. INFLUENCES

Every new story borrows elements from stories that have come before it. In addition to past stories, authors may be influenced by their culture, community, family, and friends. Relationship stories and their authors are no different. In this section, I would like to ask you about the influence of others' relationship stories on your own, and vice versa.

a. General Influences [1-2 minutes]

Do you think that the ways that relationships are portrayed in books, movies, or society in general have influenced your attitudes about your relationship? If so, how so?

b. Positive Influences [1-2 minutes]

Are there any couples whose relationship story has had a positive influence on your relationship? These couples may be from the present or past, living or not, and they may be real or fictional. [[PAUSE]] *(If multiple couples come to mind, then please choose the one whose story you think has had the greatest positive influence on yours).* How has this couple's story influenced your relationship story? [[PAUSE]] *(Is there something that you've observed in their relationship that has affected you or*

your relationship in a particular way?) Why do you consider this influence to be such a positive one for your relationship?

c. Negative Influences [1-2 minutes]

Now instead of thinking of positive influences, are there any couples whose relationship story has negatively influenced your relationship? *[[PAUSE]] (If multiple couples come to mind, please choose the one whose story you think has had the greatest negative influence on yours.)* How has this couple's story influenced your relationship story? *[[PAUSE]] (Is there something that you've observed in their relationship that has affected you or your relationship in a particular way?)* Why do you consider this influence to be such a negative one for your relationship?

d. Your Influences [1-2 minutes]

Rather than thinking about how your relationship story has been influenced by others, I want you to think now about how your story may have influenced others' relationships, either positively or negatively. *[[PAUSE]] (For example, do you think your relationship has had an influence on any of your friends, siblings, or family members?) (If multiple examples come to mind, please identify the one in which your relationship had the greatest influence on someone else's relationship story.)* Was it a positive or negative influence? How did your relationship influence this other one? *[[PAUSE]]* Why do you think this influence was such a positive/negative one for the other relationship?

Thank you.

e. Advice [1 minute]

We learn from our life experiences. Drawing on the experiences you have gained as a co-author and protagonist of your relationship story, what insight about relationships would you write in a letter to your younger self? *[[PAUSE]]* Please say a few words about why you chose this particular insight.

9. RELATIONSHIP THEME [1 minute]

Looking back over your entire relationship story with all its scenes and challenges, extending back into the past and ahead into the future, do you discern a central theme, message, or idea that runs throughout the story? What is the major theme in your relationship story?

10. COMPLEMENTARITY [1 minute]

How closely do you think your partner's story of your relationship would match yours? For example, are the high point, low point, and turning point the same as yours? Does the next chapter look the same? Does your partner's version of the story have the same central theme? Please explain.

11. STORY TITLE [0-1 minutes]

If you were to give your relationship story a title, what would that title be?

12. REFLECTION [1-3 minutes]

I have just one more question for you. Many of the stories you have told me are about experiences that stand out from the day-to-day. For example, we talked about a high point, a turning point,

challenges, etc. Given that most people don't share their relationship stories in this way on a regular basis, I'm wondering if you might reflect for one last moment about what this interview has been like for you. [[PAUSE]] What were your thoughts and feelings during the interview? [[PAUSE]] Did any of your answers surprise you? [[PAUSE]]

Do you have any other comments about the interview process? [[PAUSE]] Thank you very much for this interview.

END

APPENDIX G: Erklärung zur wissenschaftlichen Lauterkeit

Ich erkläre hiermit, dass die vorliegende Arbeit ohne die Hilfe Dritter und ohne Benutzung anderer als der angegebenen Hilfsmittel selbstständig verfasst habe. Zu Hilfe genommene Quellen sind als solche gekennzeichnet. Die veröffentlichten oder zur Veröffentlichung in Zeitschriften eingereichten Manuskripte wurden in Zusammenarbeit mit den Koautoren erstellt und von keinem der Beteiligten an anderer Stelle publiziert, zur Publikation eingereicht, oder einer anderen Prüfungsbehörde als Qualifikationsarbeit vorgelegt. Es handelt sich dabei um folgende Manuskripte:

- **Bühler, J. L., Weidmann, R., & Grob, A. (2019).** *Getting along and getting ahead as actor, agent, and author: A three-layered personality perspective in the light of master motives.* Manuscript submitted for publication.
- **Bühler, J. L., & Dunlop, W. L. (in press).** The narrative identity approach and romantic relationships. *Social and Personality Psychology Compass.*
- **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.* Advance online publication. doi: 10.1002/per.2194
- **Bühler, J. L., Weidmann, R., Kumashiro, M., & Grob, A. (2018).** Does Michelangelo care about age? An adult life-span perspective on the Michelangelo phenomenon. *Journal of Social and Personal Relationships.* Advance online publication. doi:10.1177/0265407518766698
- **Bühler, J. L., Weidmann, R., Wünsche, J., Burriss, R. P., & Grob, A. (2019).** *Insights into couples' everyday lives: Relationship processes and their day-to-day variability as explanatory mechanisms underlying personality-relationship transactions.* Manuscript submitted for publication.

Basel, den 14. Februar 2019

Janina Larissa Bühler

APPENDIX H: Curriculum Vitae**Janina Larissa Bühler**

Curriculum Vitae

Personal Information

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Date and Place of Birth	March 24, 1988 in Freiburg im Breisgau, Germany

Academic Background

PhD in Psychology 02/2016 to present	SNF Doc.CH Doctoral Candidate Division of Personality and Developmental Psychology Department of Psychology University of Basel, Switzerland Supervisors: Prof. Dr. Alexander Grob, Prof. Dr. Jana Nikitin
Research Associate 09/2014 – 01/2016	Division of Personality and Developmental Psychology Department of Psychology University of Basel, Switzerland Grant proposal writing for SNF Doc.CH personal grant P0BSP1_168915 (Grantee: Janina L. Bühler) and SNF research project grant 100019_162697 (PI: Prof. Dr. Alexander Grob).
MSc in Psychology 01/2012 – 08/2014	University of Bern, Switzerland Honors: Insigni cum laude (Grade: 5.6/6.0) Master's thesis: Biological, psychological, and social determinants of sociosexuality (Grade: 5.5/6.0) Supervisor: Prof. Dr. Thomas Rammsayer
BSc in Psychology 09/2008 – 08/2011	University of Fribourg, Switzerland Honors: Insigni cum laude (Grade: 5.5/6.0) Bilingual studies Bachelor's thesis: An empirical evaluation of the prevention program learning with children (Grade: 6.0/6.0) Supervisors: Prof. Dr. Meinrad Perrez, Fabian Grolimund

Research Visits

Northwestern University, Evanston, IL, USA

Prof. Dr. Dan McAdams

Developing, preparing, and conducting research project on couples' relationship narratives (Northwestern Study of Relationship Narratives).

Period: 3/2017 – 7/2017 and 11/2017

University of California, Riverside, CA, USA

Prof. Dr. David Funder

As a collaborator in the International Situations Projects involved in the final steps of preparing the project to be sent to all collaborators.

Period: 9/2016 – 12/2016

Grants and Scholarships

Antelope Program. Fellow in a program for highly qualified female doctoral students and postdoctoral researchers at the University of Basel, Switzerland | 2019 – 2020

Swiss National Science Foundation. Grant for conducting dissertation project. Title: How we become who we are within romantic relationships. Disentangling the complex interplay between personality and romantic relationships from three perspectives. Amount \$184,845 | 10/2016 – 10/2019

Swiss National Science Foundation. Grant for conducting a research visit at the University of Heidelberg, Germany. Amount \$9,900 | 1/2019 – 7/2019

Swiss National Science Foundation. Grant for conducting a research visit at Northwestern University, Evanston, IL, USA. Amount \$13,900 | 3/2017 – 11/2017

Swiss Study Foundation. Grant for conducting research visit at the University of California, Riverside, CA, USA. Amount \$5,100 | 9/2016 – 12/2016

Swiss Study Foundation. Fellow | 2008 – 2017

Travel Funding

Swiss Academy of Humanities and Social Sciences. Grant for presenting at the 15th Biennial Conference of the Association for Research in Personality, Sacramento, CA, USA. Amount \$1,200 | 2017

University of Basel. Grant for presenting at the 28th Annual Convention of the Association for Psychological Science in Chicago, IL, USA. Amount \$1,460 | 2016

Jacobs Foundation. Travel award for presenting at the 7th Conference of the Society for the Study of Emerging Adulthood in Miami, FL, USA. Amount \$500 | 2015

University of Basel. Grant for presenting at the 7th Conference of the Society for the Study of Emerging Adulthood in Miami, FL, USA. Amount \$1,930 | 2015

Swiss Study Foundation. Grant for attending the Summer School at the Leibniz Institute in Bamberg, Germany. Amount \$510 | 2015

Swiss Study Foundation. Grant for attending the Summer School at the University of Utrecht in Utrecht, the Netherlands. Amount \$510 | 2015

Swiss Academy of Humanities and Social Sciences. Grant for presenting at the 14th Biennial Conference of the Association for Research in Personality in St. Louis, MO, USA. Amount \$1,200 | 2015

Peer-Reviewed Journal Articles

Bühler, J. L., & Dunlop, W. L. (in press). The narrative identity approach and romantic relationships. *Social and Personality Psychology Compass*.

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*. Advance online publication. doi:10.1002/per.2194

Bühler, J. L., Weidmann, R., Kumashiro, M., & Grob, A. (2018). Does Michelangelo care about age? An adult life-span perspective on the Michelangelo phenomenon. *Journal of Social and Personal Relationships*. Advance online publication. doi:10.1177/0265407518766698

Book Chapters

Dunlop, W. L., **Bühler, J. L.** (in press). A life course approach to personality. In V. Zeigler-Hill & T. Shackelford (Eds.), *Encyclopedia of personality and individual differences*. Cham, Switzerland: Springer.

Gardiner, G., Baranski, E., & **Bühler, J. L.** (in press). Cross-cultural assessment of situational experience. In D. Funder, J. F. Rauthmann, & R. Sherman (Eds.), *The Oxford handbook of psychological situations*. New York, NY: Oxford University Press.

Conference Paper Presentations

Bühler, J. L., Maghsoodi, H., & McAdams, D. P. (2018, July). How can you love and have no story to tell? Narrative approaches applied to romantic relationships. In **J. L. Bühler** (Chair), Current approaches and methods for studying the interplay between personality and romantic relationships. Symposium conducted at the 19th European Conference on Personality, Zadar, Croatia.

- Weidmann, R., **Bühler, J. L.**, Wünsche, J., Burriss, R. P., & Grob, A. (2018, July). Every day another way: How variability in daily relationship processes explains the effects of personality vulnerabilities on relationship satisfaction in couples. In **J. L. Bühler** (Chair), Current approaches and methods for studying the interplay between personality and romantic relationships. Symposium conducted at the 19th European Conference on Personality, Zadar, Croatia.
- Grob, A., Burriss, R. P., Weidmann, R., Wünsche, J., & **Bühler, J. L.** (2018, July). Leaving footprints on the intimate partner's personality. In J. Borghuis (Chair), Dynamics of personality and close relationships. Symposium conducted at the 19th European Conference on Personality, Croatia.
- Weidmann, R., **Bühler, J. L.**, Burriss, R. P., & Grob, A. (2017, September). Neuroticism and the trajectory of sexual satisfaction across two weeks: A daily diary study. In M. Mund (Chair), I, you, and we. Dyadic perspectives on romantic relationships. Symposium conducted at the 14th DPPD conference, Munich, Germany.
- Bühler, J. L.**, Weidmann, R., Nikitin, J., & Grob, A. (2017, September). Across the years of adulthood: Which roles do life goals play for romantic relationships? In T. Braun (Chair), Forming social relationships across the life span. Symposium conducted at the PAEPSY conference, Münster, Germany.
- Bühler, J. L.**, Weidmann, R., Ledermann, T., & Grob, A. (2017, August). Understanding the association between sociosexuality and relationship satisfaction from an attachment perspective. In Y. Rongquin (Chair), Risky aspects of youth romantic relationships. Symposium conducted at the 18th European Conference on Developmental Psychology, Utrecht, the Netherlands.
- Bühler, J. L.**, Weidmann, R., Kumashiro, M., & Grob, A. (2017, July). Does Michelangelo care about age? Age-related differences in the Michelangelo phenomenon. Blitz presentations at the 18th General Meeting of the European Association of Social Psychology, Granada, Spain.
- Bühler, J. L.**, Weidmann, R., & Grob, A. (2017, June). The relational self as actor, agent, and author. How personality layers affect relational well-being. In **J. L. Bühler** & W. L. Dunlop (Chairs), Life narratives in interpersonal contexts. Symposium conducted at the 15th Biennial Conference of the Association for Research in Personality, Sacramento, CA, USA.
- Bühler, J. L.**, & Weidmann, R. (2016, July). CouPers: An integrative framework of personality, relationship processes, and relationship outcomes. In **J. L. Bühler**, R. Weidmann, & A. Grob (Chairs), Illuminating the black box of romantic relationships: Relationship processes explaining associations between personality and relationship outcomes in couples. Symposium conducted at the 19th Annual Meeting Society for Interpersonal Theory and Research, Berlin, Germany.
- Bühler, J. L.**, Weidmann, R., & Grob, A. (2016, July). The relational self as actor, agent and author. Understanding life and relationship satisfaction from three personality layers. In D. McAdams (Chair), The role of life narrative in personality psychology. Symposium conducted at the 18th European Conference on Personality, Timisoara, Romania.
- Weidmann, R., **Bühler, J. L.**, & Grob, A. (2016, July). The CouPers Model: An integrative framework of personality, relationship processes, and relationship outcomes. In **J. L. Bühler**, R. Weidmann, & A. Grob (Chairs), The black box of romantic relationships: Relationship processes explaining the associations between personality and outcomes in romantic couples. Symposium conducted at the 18th European Conference on Personality, Timisoara, Romania.

Weidmann, R., **Bühler, J. L.**, & Grob, A. (2015, September). Growth striving within romantic relationships. In J. Nikitin & V. Job (Chairs), Motivation in close personal relationships. Symposium conducted at the 14th Congress of the Swiss Psychological Society, Geneva, Switzerland.

Conference Poster Presentations

Bühler, J. L., Weidmann, R., Ledermann, T., & Grob (2016, May). Understanding the association between sociosexuality and relationship satisfaction from an attachment perspective. Poster presented at the 28th Annual Convention of the Association for Psychological Science, Chicago, IL, USA.

Bühler, J. L., & Grob, A. (2016, May). Does Michelangelo worry about age? Generational differences in the Michelangelo phenomenon. Poster presented at the 9th Annual Meeting of the Society for the Study of Motivation, Chicago, IL, USA.

Bühler, J. L., & Grob, A. (2015, October). Does Michelangelo worry about age? The moderating role of age on the Michelangelo phenomenon. Poster presented at the 7th Conference of the Society for the Study of Emerging Adulthood, Miami, FL, USA.

Bühler, J. L., Borter, N., & Rammsayer, T. (2015, September). Differential effects of biological sex and relationship status on aspects of sociosexuality. Poster presented at the 14th Congress of the Swiss Psychological Society, Geneva, Switzerland.

Bühler, J. L., & Grob, A. (2015, June). The relational self as actor, agent, and author: Understanding life and relationship satisfaction from three distinct personality layers. Poster presented at the 14th Biennial Conference of the Association for Research in Personality, St. Louis, MO, USA.

Teaching and Supervision

Seminars and Lectures

Personality and differential psychology | Lecture | Bachelor | University of Basel | Autumn 2018

Master's colloquium in personality and developmental psychology | University of Basel | 2016 – 2018

Romantic relationships: Theories, concepts, empiricism | Seminar | Master | University of Basel | 2016

Personality development in close relationships | Seminar | Bachelor | University of Basel | 2015

Social competence training | Seminar | Bachelor | University of Zurich | 2013

Supervision of Master's Students

Stefanie Szabo | University of Basel | 2018 – 2019

Public Talks

How personality affects romantic relationships | Public Universities of Basel and Zurich | 2017 – 2018

Understanding the interplay between personality and close relationships | University of Basel | 2015

Further Education and Training

Good Scientific Practice. Summer School | German Study Foundation | Neubeuern, Germany | 2017

Couple Therapy. Advanced Studies | University of Zurich, Switzerland | 2014 – 2016

Performing Arts and Speech. Advanced Studies | Zurich University of the Arts | 2013 – 2014

Journalism. Diploma | Distance School of Journalism | Berlin, Germany | 2011 – 2014

Academic Services

Assessor. Swiss Study Foundation | Zurich, Switzerland | 2017 to present

Faculty Representative. Quality Assessment of Swiss Universities | Bern, Switzerland | 2014

Counselor. Psychological Counseling Center | University of Bern, Switzerland | 2013 – 2014

Media Coverage

Interview. Does Michelangelo care about age? | *JSPR Relationship Matters Podcast* | 2019

Interview. Fewer divorces in Basel: Insecure times, longer marriages | *Basler Zeitung* | 2019

Interview. The psychology of romantic relationships | *Public University of Basel* | 2018

Article. Is our generation incapable of having long-lasting relationships? | *Edition F* | 2016

Interview. How the media might affect our social relationships | *NZZ Campus* | 2015

Ad Hoc Reviewer

Developmental Psychology

Diagnostica

European Journal of Personality

Journal of Social and Personal Relationships

Narrative Inquiry