RESEARCH PAPER

Maturity and Well-Being: The Development of Self-Authorship, Eudaimonic Motives, Age, and Subjective Well-Being

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Abstract

In this article, we investigate psychological maturity and other eudaimonic phenomena to predict subjective well-being (SWB), as well as if age moderate the relationship between psychological maturity and SWB. To assess psychological maturity, we analyzed 223 participants' narratives of a high point in their life, according to Kegan's (In over our heads: the mental demands of modern life, Harvard University Press, Cambridge, MA, 1994) theory of adult development and the accompanying subject-object interview guide. In a multiple regression analysis, we found support for our first hypothesis that level of psychological maturity in the narratives significantly predicts SWB when controlling for other eudaimonic phenomena like meaning in life, growth motivation, and authenticity. We found some support for our second hypothesis that age moderated the relation between psychological maturity and SWB, but not in the expected direction. That is, maturity predicted SWB only for those under 60 years old and not for the older age group, but this moderating influence of age on the relation between psychological maturity and SWB was not supported in regression models with a continuous or tripartite age variable. These are novel results as psychological maturity has traditionally not been associated with well-being. We discuss our findings in relation to similar constructs such as autonomy that have traditionally been linked with SWB.

Keywords Psychological maturity · Well-being · Aging · Development · SWB · Eudaimonia

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1 Introduction

Our inquiry begins with a contradiction in what it means to live a good life. On the one hand, the cultivation of wisdom is a cultural ideal in societies around the world and throughout written history, for example, from ancient Greece to India to China (Taylor 2012). On the other hand, a critical component of wisdom from the Aristotelian perspective—that is, thinking complexly rather than simplistically—has been routinely found to have no empirical correlation with pleasure-based measures of happiness or well-being (Flanagan 1991; e.g. Bauer et al. 2005; King et al. 2000).

However, practical wisdom is not merely a matter of thinking complexly, because complex thinking can be selfish or otherwise egoistic. Practical wisdom also involves thinking humanely, that is, thinking complexly about the experiential welfare of the self and others in balance—as opposed to thinking complexly in ways that merely benefit the self (Bauer et al. 2019). Humane thinking itself has a well-established tie to well-being, notably in the research on self-determination theory (Deci and Ryan 2012; e.g. Kasser and Ryan 1996). Thinking complexly and humanely is more typically called *psychological maturity*, *psychosocial maturity*, or *personal maturity* (Staudinger et al. 2005). Kegan's (1982, 1994) developmental theory of meaning making captures this combination of thinking complexly and thinking humanely and is used to operationalize psychological maturity of written narratives in this study. In the present study, we examine the role of two of Kegan's constructs—the socialized and self-authoring mind—among noted features of a good life in predicting subjective well-being (SWB).

1.1 Psychological Maturity and Well-Being in Kegan's Model

The organizing structure of meaning making from a developmental perspective is a key feature of wisdom and is often referred to as psychological maturity (Staudinger et al. 2005). The term includes many different developmental theories such as the humanistic approaches to personality development of Maslow (1968, 1970) and Rogers (1961), the psychosocial developmental theory of Erikson and Erikson (1982/1997), ego development (Loevinger and Blasi 1976), moral reasoning (Kohlberg 1969), and meaning-making system (Kegan 1982, 1994). According to Fossas (2019), the conceptual and structural similarities between different theories of development "suggest that a common maturational process underlies an array of critical psychological dimensions (e.g., cognitive, affective, reflective, and personality-related) across the human lifespan" (p. 1934). These different theories focus on the development of an increasing capacity to think complexly and integrative about the welfare and experience of both oneself and others (which in the present study we are calling *psychological maturity*). This developmental focus is by some labeled constructive-developmental (Vincent 2014), which holds that we construct our understanding of our world, as opposed to stumble upon it (constructivism), and the how the way we construct evolve through qualitatively more complex stages (developmentalism) (Kegan 1982, 1994). Although such development is often framed as 'more' or 'higher', it is important to note that the stages of development "is not simply an index of mental health or well-being" (Duffy et al. 2017, p. 41). That is, level of psychological maturity has often been found as unrelated to measures of well-being (Bauer et al. 2015; Bonnett 2016; Noam 1998). However, a recent study by Fossas (2019) found a significant positive relation between well-being and psychological maturity.

In the present study, we employ Kegan's (1982, 1994) constructive developmental theory of adult development, to guide our process of operationalizing psychological maturity. In this theory, Kegan describes five qualitatively different levels of psychological maturity, where the first two levels (impulsive and instrumental mind) are primarily limited to childhood and adolescents while the following three are in adulthood: the socialized, self-authoring and self-transforming mind. Each successive level of maturity reflects an increasing capacity for more complex perspective taking at a cognitive (what is knowledge), intrapersonal (who am I) and an interpersonal (how do I relate to others) level (Kegan 1994). In this study, we focus on the socialized and the self-authoring maturity and propose that the distinction between the two could be associated with SWB. The two levels of maturity also appear to be the most common levels in adulthood. According to Kegan and Lahey (2009) approximately 80–90% of adults make meaning between the socialized and self-authoring maturity level, while the self-transforming mind is seldom seen (less than 1%).

Kegan's theory is concerned with perspective-taking and each of the levels of psychological maturity are defined by the subject-object balance, where subject refers to what one is embedded in and unable to take a perspective on, while object refers to those aspect that one is able to have a perspective and act upon (Berger 2005). I.e. "[w]e *have* object; we *are* subject" (Kegan 1994, p. 32, emphasis in original). In the gradual development from one level of maturity to the next (the journey includes several in-between levels), one is "able to *look at* what the prior way of knowing could only *look through*" (Kegan and Lahey 2010, p. 438, emphasis in original). At the maturity level of the socialized mind, one can have a perspective on one's desires and interests and accommodate these to those of others. Here one's sense of self is fused with the values and expectations of one's surrounding (Helsing and Howell 2014). At this level of maturity, it can be a challenge if the surrounding people (e.g. parents, friends, society) expect different things, since one has not yet developed an independent internal system that can mediate or resolve such a divide. At the self-authoring level of maturity, one has a more "integrative" self that expands on and incorporates the capacities from the socialized level (indeed each level is more complexly integrative than the previous level). The capacity for self-authorship can be defined as "the internal capacity to define one's beliefs, identity and social relations" (Baxter Magolda 2008, p. 269). Here one has developed an internal system that is no longer solely dependent on others, which makes it possible to discriminate between others and one's own opinion (Kegan and Lahey 2010). Individuals at this level do not value relationships with others any less than at the preceding socialized level, but one is able to have a perspective on the relationships. This contrasts with being "within" the subjective perspective where one's interpretations of the relationship are not "interpretations" at all but rather are in fact the only extant reality of that relationship.

The concept of self-authorship in Kegan's theory draws similarities with the construct of autonomy, which is an important aspect of eudaimonic accounts of both maturity and well-being. However, "autonomy" means many things. For Kegan, autonomy has more to do with a kind of individuation that develops after one has wrestled with the ways in which one is both independent of others and dependent on others—a kind of interdependence that generally does not emerge until young adulthood at the earliest (Loevinger and Blasi 1976). This is certainly not the basic autonomy in Erikson's (1968) stage of autonomy versus shame and doubt in the second year of life. Autonomy here is also not the same as in Ryff's (Ryff 1989; Ryff and Keyes 1995) dimension of psychological well-being, where autonomy refers to a sense of being independent. Autonomy here is closer to the autonomy of self-determination theory (Ryan and Deci 2000), where autonomy is not about merely

adolescent strivings for independence but rather, at higher forms of development, about a matter of cherishing the principle of autonomy, not just for oneself but for others as well (as in "autonomy support"; Weinstein and Ryan 2010). The emergence of autonomy as well as other similar constructs such as agency, authenticity and self-actualization are argued to be one of the characteristics of the transition from the socialized to the self-authoring level of maturity (Fossas 2019).

In Kegan's (1994) analysis of what modern society demands of adults' level of psychological maturity, he argues that for most of the tasks in adulthood, modern society demand the capacity for self-authorship. The demand in modern society on individuals' capacity to be self-authoring presents a conflict for many, as data indicate that that about half of the adult population have yet to develop such a capacity for self-authorship (Kegan 1994), and instead make-meaning in terms of socialized mind, relying on external perspectives in forming one's belief about oneself and the world. This dissonance between capacity and demand, lead Kegan to describe people as "in over their heads" (Kegan 1994). In this paper, we predict that psychological maturity is a significant predictor of a person's SWB, where the psychological maturity level of the self-authoring mind would be positively associated with SWB, compared with the socialized mind. This prediction is in line with Fossas' (2019) findings of well-being peaking at the self-authoring level of maturity.

In addition to this overall positive relation between SWB and psychological maturity, we propose that the period of old age can entail an extra demand for the self-authoring mind. With old age being a period of substantial heterogeneity, some differentiate between a third and fourth age (Laslett 1996). Where the onset of the third age cluster around 60–65 years and the usual cut-off point between third and fourth age for research purposes is 85 years (Robinson 2013). In our study, old age corresponds with this understanding of the third age, which can be characterized by retirement from working life and a period with relatively good health, active and social engagement and personal fulfillment (Laslett 1996). We are particularly interested in exploring old age in relation to psychological maturity, as this period is "characterized by fewer social norms and expectations guiding the setting, pursuing, and maintaining of goals, as well as the disengagement from them" (Freund et al. 2009, p. 28). With the socialized mind being reliant on the surroundings for regulation and creation of the self and one's values, this level of maturity appears ill-equipped (compared to the self-authoring mind) when there is fewer expectations from the surroundings. There are also some indications that self-authorship is important for elder's well-being, e.g. in a recent qualitative study, self-authorship was one of constituting elements in retirees' experiences of well-being (Bauger and Bongaardt 2016).

Kegan (1994) emphasizes that how levels of psychological maturity relate to well-being depends on how they match with individuals' daily life requires of them. For instance, if a person consistently finds themselves in situations that require them to have a more mature way of thinking than they have developed the capacity for, then their well-being may suffer. To illustrate the point Kegan (1994, pp. 100–101) uses the analogy of driving a car, where he compares the capacity to drive a car with stick-shift transmission (more complex) and the capacity to drive a car with automatic transmission (less complex). In this case, one cannot necessarily say that stick-shift or automatic drivers are better or safer drivers, but there is a difference in the two capacities. Namely, that the capacity to drive a stick-shift also includes driving an automatic car, which is not necessarily the case for automatic drivers. If there is plentiful supply of automatic cars and the circumstances do not require one to drive a stick-shift, then the more complex capacity to drive a stick-shift is unnecessary. However, if most of the world consisted of manual transmission cars, not having this capacity would be a serious hindrance to your car driving abilities. In other words,

Kegan is claiming that if we have developed a level of maturity in our thinking, matching or exceeding the actual, lived experience of the person or persons in question, then we are more likely to adapt satisfactorily to life's situations.

1.2 Age, Psychological Maturity, and Well-Being

According to Bugenhagen and Barbuto (2012) there is not a direct relation between psychological maturity and chronological age, except at especially low levels, as there is some constraint where most theories claim that less-mature stages are appropriate properties of childhood and adolescence (Loevinger and Blasi 1976; Morros 2001). In Cohn's (1998) meta-analysis of the relation between level of Loevinger's ego development and age, a moderate correlation ($r = .40$) was reported among adolescent samples, while in adult samples there was no relation ($r = .04$). Chronological age and ego development tend not to have a linear relation in adulthood. Lilgendahl et al. (2013) found support for such a positive trend in their longitudinal study of level of ego development, where a mean-level increase was observed from age 43 to age 61. However, Kegan's measure of maturity is not as exclusively tied to cognitive complexity as Loevinger's measure. For Kegan's measure, there appears to be a levelling off in adulthood where for many their level of maturity stabilizes (Vincent 2014), and fewer individuals reach the more mature levels (Kegan and Lahey 2009). Additionally, Kegan and Lahey (2009) emphasize how, on the individual level, maturity is not a continuous unfolding but instead involves periods of stability and periods of change.

1.3 Meaningfulness, Growth Motivation, and Authenticity

As mentioned above, psychological maturity is one of several aspects of eudaimonia (Bauer 2016). Most measures of eudaimonia in psychology (including Kegan's) address questions of fulfillment, satisfaction, and meaningfulness (i.e., well-being, as typically modeled). In contrast, developmental, psychological maturity in Kegan's model also involves a dimension of integrative complexity in thinking about the self and others, which is unique among those measures (Bauer et al. 2019). In this article, we are interested in exploring how levels of psychological maturity predict SWB, while also controlling for three eudaimonic factors that are established predictors of SWB: meaning in life, growth motivation, and authenticity. Kegan's maturity includes elements of each of these but also the unique, developmental factors just mentioned, allowing for a test of maturity's incremental validity in predicting SWB.

One factor that has been considered a key factor of eudaimonia is meaningfulness in life (i.e., "having meaning in life"), in addition to also being associated with SWB (Steger et al. 2013). Meaning in life is argued to consist of feeling that your life matters, makes sense and has purpose (Martela and Steger 2016). Considerable empirical evidence has found positive effects of meaning in life on several aspects of physical and psychological well-being and have been argued as a flagship indicator of well-being (Steger et al. 2013).

The development of eudaimonia over time has been called *eudaimonic growth* and can be considered as increases in both psychological maturity and well-being (Bauer and McAdams 2010). The desire for growth in both these areas has been coined growth motivation (Bauer et al. 2015) and can be characterized as experiential and reflective. Whereas experiential growth motivation is the desire to cultivate personally meaningful activities and relationships, reflective growth motivation concerns the desire toward developing one

capacity for complex thinking, deeper conceptual understanding and intellectual development, and wisdom (Bauer 2016). An important distinction here is that this construct is not concerned with the presence of either maturity or well-being, but to what degree a person is motivated towards these two aspects of eudaimonia (Bauer et al. 2015). Nevertheless, they, are positively associated with measures of maturity and well-being respectively (Wayment and Bauer 2018). In narrative meaning-making, motivational themes for reflective growth have predicted increases in demonstrated maturity 3 years later, whereas motivational themes for experiential growth have predicted increases in well-being over that time (Bauer and McAdams 2010; also see Lilgendahl and McAdams 2011).

Inspired by humanistic/existential psychology (e.g. Maslow 1968; Rogers 1961), the concept of authenticity can be considered as an important aspect for individuals well-being. Here authenticity is understood as the degree to which a person is experiencing congruence between one's behaviors, emotions and deeply held values and beliefs (Wood et al. 2008). In research, overall authenticity has been associated with both eudaimonic and hedonic measures of well-being (Di Fabio and Palazzeschi 2015). In Wood et al. (2008) much used conception of authenticity, the concept is tripartite: self-alienation, accepting external influences and authentic living. Self-alienation is the degree to which one feels in contact with or in touch with one's 'true self', authentic living is the degree to which your behavior is consistent with your ideals and values, and accepting external influences is the degree to which one conforms to the expectations of others. Within this conceptualization of authenticity, authentic living has a positive relation with hedonic and eudaimonic measures, while the two others are negatively associated with both hedonic and eudaimonic well-being (Wood et al. 2008).

Personality traits have been proposed as an important part in understanding why levels of well-being are relatively stable, and research into the relation between the two factors have been substantial (Anglim and Grant 2016). In meta-analyses (DeNeve 1999; Steel et al. 2008), the traits neuroticism and extraversion have emerged with the highest correlations with SWB. Where extraversion is positively associated with SWB, while neuroticism is negatively associated.

2 The Present Study

We aim to explore the relation between psychological maturity and well-being. In particular, we want to investigate if level of maturity could be considered a significant predictor of SWB, and if this proposed relation holds up when controlling for other eudaimonic predictors of SWB. This means that our approach is in line with Sheldon's (2013, 2016) model of using eudaimonic factors as predictors of hedonic well-being. We are also interested if age group moderate the relation between psychological maturity and subjective well-being. As a methodological concern, another aim of this study is to explore the feasibility of employing a psychological maturity measure, using the theory of Kegan (1982, 1994) with shorter written narratives. We have developed the following hypotheses.

Hypothesis 1 Higher levels of psychological maturity in written narratives (Kegan's self-authorship stage, compared to the socialized stage) predict higher levels of well-being, controlling for age group, big-five traits, authenticity, experiential growth motivation, and meaningfulness in life.

Hypothesis 2 Age group moderates the relation between psychological maturity and well-being. More specifically, we expect to find a significant interaction such that psychological maturity in narratives predicts SWB in old age but not in young or middle adulthood.

3 Method

3.1 Participants

This is a cross-sectional study and the participants in this study were selected from a larger study, the Study of Adult Life and Transitions (SALT). SALT is a recently launched prospective longitudinal study with the aim of studying phenomena across the lifespan. Participants in the study are the alumni of a private research university in the Midwestern United States. In the first wave of data collection in the SALT study, 754 participants responded to the questionnaire. From this larger sample, we selected the participants who had given a detailed description of a significant memory from their college years, so that we could analyze those narratives for their psychological maturity. Our final sample consisted of 223 participants (Table 1), 135 (60%) were female while 87 (40%) where male, 219 participants completed all data points and the regression analysis involved these 219. The mean age of participants was 46.4 years (SD = 16.86), ranging from 22 to 84 years old. With our second hypotheses concerned old age compared to younger age groups, we constructed a tripartite age variable where older age was categorized as 60 years or older, while the younger age groups of young and middle age were categorized as below 40 and between 40 and 59 years, respectively. With the age of participants in the old age category ranging from 60 to 84 years old in our study, it could be argued as primarily consisting of the so-called third agers. Regarding the three age groups most of our participants were below 40 years old (44%), while the middle (27%) and old age (29%) groups were relatively equal. Apart from chronological age, there were no significant differences between those who had provided a description of a college high point (our final sample) and those who did not. In terms of age, those who had provided a narrative were significantly older (M = 46.23, SD = 16.80) compared to those who did not (M = 43.36, SD = 16.70), t (674) = 2.10, p = .036.

Table 1 Demographic information of participants

Age group	Gender		Total
	Female	Male	
Young age (≤ 39)	69 (51%, 71%)	28 (32%, 29%)	97 (44%)
Mid age (40–59)	37 (27%, 61%)	24 (28%, 39%)	61 (27%)
Old age (≥ 60)	29 (22%, 45%)	35 (40%, 55%)	64 (29%)
Total	135 (60%)	87 (40%)	223

One participant in the young age category identified as 'other' on gender. The percentages in the parentheses are representing proportions of gender and age group respectively

3.2 Measures

3.2.1 Subjective Well-Being (SWB)

SWB was a compound measure calculated by the scores from Satisfaction With Life Scale (SWLS) (Diener et al. 1985) and the Scale of Positive and Negative Experiences (SPANE) (Diener et al. 2010). SWLS is a short and effective 5-item measure of overall life satisfaction. The scale has demonstrated good psychometric characteristics (Pavot and Diener 2008). Items include "In most ways my life is close to my ideal" and "If I could live my life over, I would change almost nothing". The participants rated the items on a 7-point scale ranging from *strongly disagree* (1) to *strongly agree* (7). SPANE is a recently developed scale, measuring a broad range of pleasant and unpleasant feelings. The scale consists of 12-items grouped into two subscales, one for positive and one for negative feelings. The scale asks participants to report how much they have experienced the given feelings the last 4 weeks, six positive and six negative feelings. The feelings are rated on a 5-point scale ranging from *very rarely or never* (1) to *very often or always* (5). The scale has shown good psychometric properties in its original publication (Diener et al. 2010), supported by validation studies in Portugal (Silva and Caetano 2013), Canada (Howell and Buro 2015) and China (Li et al. 2013), with Cronbach's alpha ranging from .81 to .92. An aggregated SWB score was calculated first by standardizing the component variables and then by adding satisfaction with life with positive feelings and then subtracting the negative feelings. In this study, Cronbach's alphas were .89, .86 and .83 for SWLS, SPANE positive and SPANE negative respectively.

3.2.2 The Meaning in Life Questionnaire (MLQ)

Meaning in life was assessed using the MLQ (Steger et al. 2006) and its two subscales, presence and search, measuring the extent to which the person is experiencing a presence of and a search for meaning, respectively. For our purposes, we used the presence subscale, consisting of five statements about the persons experience of meaning in their life, which they rated on a 7-point scale from *absolutely true* (1) to *absolutely untrue* (7). Statements included "My life has a clear sense of purpose" and "I understand my life's meaning." The presence subscale has demonstrated adequate psychometric properties in the original research paper (Steger et al. 2006), as well as in a recent global study were the Cronbach's alpha ranged from .85 to .92 (Disabato et al. 2016). In this study, Cronbach's alpha was .90 for the presence of meaning subscale.

3.2.3 Authenticity Scale (AS)

The dispositional authenticity was assessed using the Authentic Personality Scale (Wood et al. 2008). The scale is based on the person-centered conception of authenticity and consists of three subscales that capture three aspects of authenticity; self-alienation; authentic living; and accepting external influences. Self-alienation reflects the degree to which a person feels he or she does not know or feel in touch with their true self. Authentic living reflects to which degree the person feels they are true to themselves and living according to their beliefs and values. Accepting external influences reflects the degree to which the person accepts the influence of other people and whether they feel obliged to conform to other's expectations of oneself. The AS asks the participant to rate to what degree they

agree with 12 statements on a 7-point scale, ranging from *does not describe me at all* (1) to *describes me very well* (7). Items include "I don't know how I really feel inside", "I always stand by what I believe in" and "I usually do what other people tell me to do". The scale has demonstrated good psychometric properties (Wood et al. 2008). Cronbach's alphas were .79 for authentic living, .86 for accepting external influences, .86 for self-alienation and .85 for the aggregate authenticity. For ease of presentation, we use the aggregate measure of authenticity.

3.2.4 Growth Motivation Index (GMI)

The GMI (Bauer et al. 2015) measures two facets of growth motivation: reflective and experiential. Where reflective growth motivation captures the "desire for conceptual learning, exploration, and gaining new perspectives on one's psychosocial life" (Bauer et al. 2015, p. 191), experiential growth motivation captures the "desire for deepening and strengthening one's experience or relationships, helping others, and building skills in activities of personal interest" (Bauer et al. 2015, p. 191). The GMI asks the participant to rate eight items on a 7-point scale: how often they do eight activities and/or reflections for the purpose of either reflective or experiential growth, with the scale ranging from *never* (1) to *always* (7). Items include "I try to do things that I find personally enjoyable, interesting, or engaging" and "I make sure to spend time with people who are dear to me". The measure has demonstrated adequate psychometric properties (Bauer et al. 2015). Cronbach's alpha was .81 for reflective growth motivation and .67 for experiential growth motivation. For our purposes, we used the scale of experiential growth motivation, since this dimension has been theorized and demonstrated as related to SWB (see Bauer et al. 2015).

3.2.5 Ten-Item Personality Inventory (TIPI)

Personality was assessed using the TIPI (Gosling et al. 2003), which is a popular brief instrument measuring the big-five personality traits. The measure includes two items measuring each of the big-five dimensions, asking the participant to rate, on a 7-point scale, to what degree they feel they agree with each statement. The scale ranges from disagree strongly (1) to agree strongly (7). Items include "I see myself as extraverted, enthusiastic", "I see myself as anxious, easily upset" and "I see myself as sympathetic, warm". The scale has shown low to moderate Cronbach's alpha ($\alpha = .40–.68$) which is common for short scales (Ziegler et al. 2014). According to Gosling et al. (2003) a better reliability measure for such short measure would be test–retest reliability, which the TIPI has demonstrated substantial stability (mean $r = .72$). It has also demonstrated substantial correlation with longer personality trait measures ($r > .65$). In sum the instrument has been demonstrated adequate psychometric properties to serve as a proxy for longer personality instruments (Gosling et al. 2003). Cronbach alphas for extraversion and neuroticism was .78 and .60 respectively.

3.2.6 Psychological Maturity

Psychological maturity was operationalized by analyzing the participants' answers to the open-ended question: "Please take a moment to think about a favorite or especially important memory from your days at [college]. It is important for this question that you think about a specific event—not a broad period or phase in life—that stands out as an especially

good or meaningful experience." Participants were then instructed to describe the who, what, where, and when of the event as well as why or how it was or is meaningful. We based our analysis on Lahey et al. (1988/2011) guide to the subject-object interview (SOI), which the authors were experienced in. The SOI is a method developed to assess the different meaning-making systems outlined in Kegan's theory of adult development (Kegan 1982, 1994). As the name of the measure suggests, the SOI distinguishes what the person's able to take as object and reflect upon and what one is subject to and unable to reflect upon.

In the present study, we tested whether the SOI protocol to measure for stages of development applies to the measurement of narratives that are elicited from simpler prompts than that of the SOI. The SOI includes prompts to describe situations that involve ten different experiences (e.g., angry, sad, success, importance to self) as well as semi-structured prompts that the interviewer uses to get the interviewee to elaborate. This is of course a time- and resource-intensive method. Instead, we used prompt to elicit a personally meaningful memory, in written (rather than vocal) form, with no prompts other than the original question. We treated the SOI like other narrative coding protocols that are used with memories of discrete, personally significant events in life (e.g., Adler et al. 2017). Thus, the present narratives were shorter than typical for SOI research.

To employ the SOI protocol, the written narratives had to be of sufficient length to glimpse the meaning-making process of the person and describe why the given event was a highpoint for them. This meant that those who did not provide an answer to this question, or their answers were too brief (e.g. "when I met my wife" as the entire response), were excluded from our study. Examples of narratives and how they were scored are presented in the supplemental material. To establish inter-rater reliability, we randomly selected 99 of the 223 narratives to be coded by two researchers. Their inter-rater reliability, using intraclass correlation, was .85. In those instances where there were differences in scores (n = 12), the scores of the author who was certified as a 'reliable scorer' was recorded, as were the rest of the narratives, according to the gold standard or master coder system (Syed and Nelson (2015).

Even though the subject-object analysis was not developed for our purposes, we argue that our narratives were eligible for such analysis, as long as we preface the scores to reflect the narrative and not necessarily a reflection of the person's full meaning-making system. Although Kegan's developmental theory describes three separate meaning-making systems most prevalent in the adult population (socialized, self-authoring and self-transforming mind), our analysis found only socialized and self-authoring narratives. Thus, for all analyses to follow, the psychological maturity variable was a dichotomous variable with scores indicating either a socialized or a self-authoring narrative. It was not surprising that the narratives could be scored as either socialized or self-authoring for two reasons. First the narratives were relatively short and not conducive to long descriptions demonstrating a very complex meaning-making system, which the self-transforming mind is. Second, individuals who have developed the meaning-making system of the self-transforming mind are 'far and few between' (Kegan and Lahey 2009).

4 Results

Gender did not emerge as significantly related to any of our main study variables. Table 2 shows how the narratives were scored across the two age groups. The narratives were quite evenly scored as either socialized or self-authoring, with a few more socialized (55%) than

Table 2 Scoring of narratives for psychological maturity

Age group	Psychological maturity		Total
	Socialized mind	Self-authoring mind	
Young age (≤ 39)	50 (41%, 51%)	48 (47%, 49%)	98 (44%)
Mid age (40–59)	36 (29%, 59%)	25 (25%, 41%)	61 (27%
Old age (≥ 60)	36 (30%, 56%)	28 (28%, 44%)	64 (29%)
Total	122 (55%)	101 (45%)	223

The percentages in the parentheses are representing proportions of psychological maturity and age group respectively

self-authoring (45%) narratives. No association was found between psychological maturity and age group X^2 (2, N = 223) = 1.06, p = .59.

4.1 Correlations

The zero-order correlation between key variables in this study are presented in Table 3. All variables correlated significantly with SWB. Chronological age correlated significantly with several of the variables as well, but it was not related to the personality factor extraversion, or growth motivation. Psychological maturity was not related to any of the other study variables apart from SWB. Setting up hypothesis 1, the proposed personality traits of extraversion and neuroticism, authenticity, meaningfulness in life, and experiential growth motivation correlated with SWB.

4.2 Regressions

Table 4 presents a hierarchical multiple regression of SWB on predicted variables. In support of Hypothesis 1, psychological maturity significantly predicted well-being, even when controlling for age group, big-five traits of neuroticism and extraversion, authenticity, meaningfulness in life, and experiential growth motivation (model 1). Notably, age group and authenticity did not contribute significantly to the model.

Table 3 Zero-order correlations between variables (N = 219)

	1	2	3	4	5	6	7	8
1. SWB	–							
2. Age (years)	.22**	–						
3. Psychological maturity	.19**	− .06						
4. Neuroticism	− .49***	− .33***	− .07					
5. Extraversion	.31***	.06	− .02	− .02				
6. Authenticity	.51***	.30***	.04	− .43***	.26***			
7. Presence of meaning	.57***	.31***	.07	− 34***	.31***	.52***		
8. Experiential growth motivation	.56***	.12	.05	− .26***	.33***	.49***	.52***	

*p < .05; **p < .01; ***p < .001. Psychological maturity = 0 represents socialized mind while 1 represents self-authoring mind

Table 4 Results of the multiple regression analysis for SWB

Model		B	SE$_b$	β	F	R^2	ΔR^2 change	95% CI	VIF	p
1					31.65***	.55				
	Age group									
	Young versus old	−.09	.07	−.07				[−.23–.05]	1.410	.201
	Mid versus old	.01	.07	.03				[−.13–.14]	1.632	.969
	Psychological maturity	.16	.05	.14				[.05–.26]	1.023	.003
	Neuroticism	−.13	.02	−.28				[−.17–−.08]	1.356	.000
	Extraversion	.04	.02	.12				[.08–.08]	1.192	.018
	Authenticity	.07	.04	.10				[−.12–.15]	1.712	.097
	Presence of meaning	.13	.03	.23				[.06–.19]	1.707	.000
	Experiential growth motivation	.19	.04	.28				[.11–.27]	1.575	.000
2					25.91***	.55	<.01			
	Age group									
	Young versus old	−.19	.09	−.15				[−.38–−.01]	2.430	.038
	Mid versus old	−.10	.09	−.09				[−.28–.08]	2.960	.260
	Psychological maturity	−.01	.10	−.01				[−.20–.19]	3.543	.951
	Neuroticism	−.19	.02	−.27				[−.16–−.07]	1.408	.000
	Extraversion	.04	.02	.11				[.01–.07]	1.197	.024
	Authenticity	.07	.04	.10				[−.01–.15]	1.716	.096
	Presence of meaning	.13	.03	.25				[.07–.19]	1.720	.000
	Experiential growth motivation	.20	.04	.28				[.12–.28]	1.585	.000
	Age group x Psychological maturity									
	Young versus old x psychological maturity	.24	.15	.13				[−.04–.53]	2.872	.096
	Mid versus old x maturity	.23	.13	.16				[−.03–.48]	4.089	.082
3					32.986***	.55	.01			
	Age group	.14	.08	.11				[−.01–.30]	1.917	.075
	Psychological maturity	.23	.06	.20				[.11–.36]	1.435	.000
	Neuroticism	−.12	.02	−.26				[−.16–−.07]	1.355	.000

Table 4 (continued)

Model	B	SE_b	β	F	R^2	ΔR^2 change	95% CI	VIF	p
Extraversion	.04	.02	.11				[.01–.07]	1.197	.026
Authenticity	.06	.04	.09				[−.02–.14]	1.686	.134
Presence of meaning	.13	.03	.24				[.06–.19]	1.704	.000
Experiential growth motivation	.20	.04	.29				[.12–.28]	1.574	.000
Age group × psychological maturity	−.24	.12	−.14				[−.47−−.01]	2.270	.045

Dependent variable: SWB, **p <.01; ***p <.001; Age group in model 1 and 2 was represented as two dummy variables with old age serving as the reference group. In model 3, age group=0 represents those under 60 years old, while 1 represents 60 years or older. Psychological maturity=0 represents socialized mind while 1 represents self-authoring mind

To test Hypothesis 2, that age group moderated the relation between psychological maturity and SWB, we used the PROCESS macro in SPSS (Hayes 2018, model 1) with psychological maturity as the independent variable and age group as the moderator variable, additionally the previous predictors from model 1 was entered as covariates. The interaction between age group and psychological maturity did not account for a significant proportion of the variance of SWB ($\Delta R^2 = 0.008$, $F(2208) = 1.89$, $p = .15$).

Even though we did not find any significant interaction of age group moderating the relation between psychological maturity in narratives and SWB, we plotted the results. As visualized in Fig. 1, it appears that for both young and midlife adults, those participants who had a self-authoring (compared with a socialized) narrative reported higher SWB. While for old age adults there were no apparent difference in SWB between those who had a socialized or a self-authoring narrative.

To explore if there was a difference between the slopes of young and mid age adults, we conducted a similar multiple regression model as above (model 2), but with a contrast coded age group variable (young $= -1$, mid age $= 1$ and old $= 0$). In this model there was not a significant interaction of young versus mid age x psychological maturity ($b = -.01$, $se_b = .06$, $p = .921$, CI $[-.136, .122]$), indicating that there was no difference between the young and mid age slopes in in Fig. 1. With our second hypothesis focusing on old age group compared with a younger age group, combined with the indication that the young and mid age group did not differ, we found it feasible to conduct a final regression analysis with a dichotomous age variable comparing the older age group with those who were younger (old $= 0$, young and mid age $= 1 =$). For this analysis we also employed PROCESS macro in SPSS (Hayes 2018, model 1). The result (model 3 in Table 4) of the regression indicated a significant overall model ($R^2 = .55$, $F(8210) = 32.986$, $p < .001$), where the interaction term of old age versus young and mid age x psychological maturity emerged as significant ($\Delta R^2 = 0.009$, $F(1211) = 4.05$, $p = .045$). To explore the interaction further we plotted the result in Fig. 2.
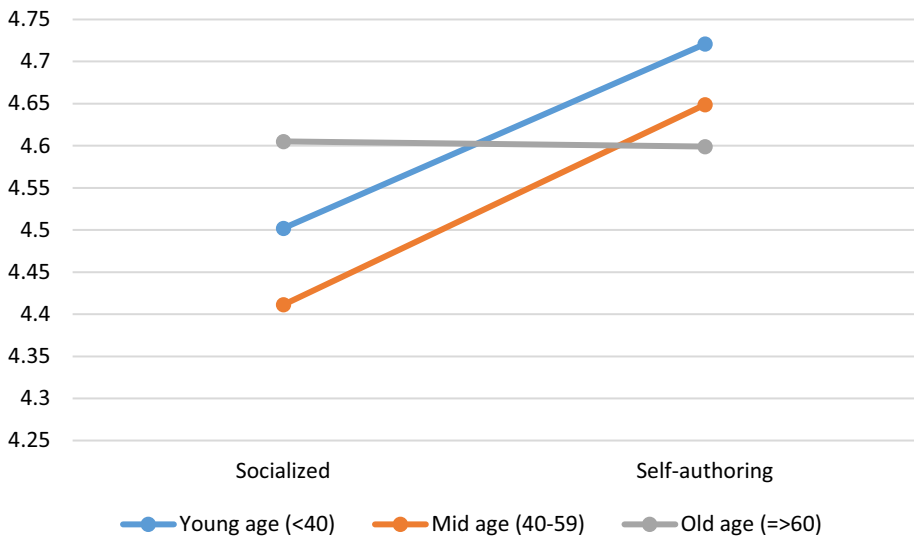

Fig. 1 Moderation of the relation between socialized and self-authoring narratives by with a tripartite age variable
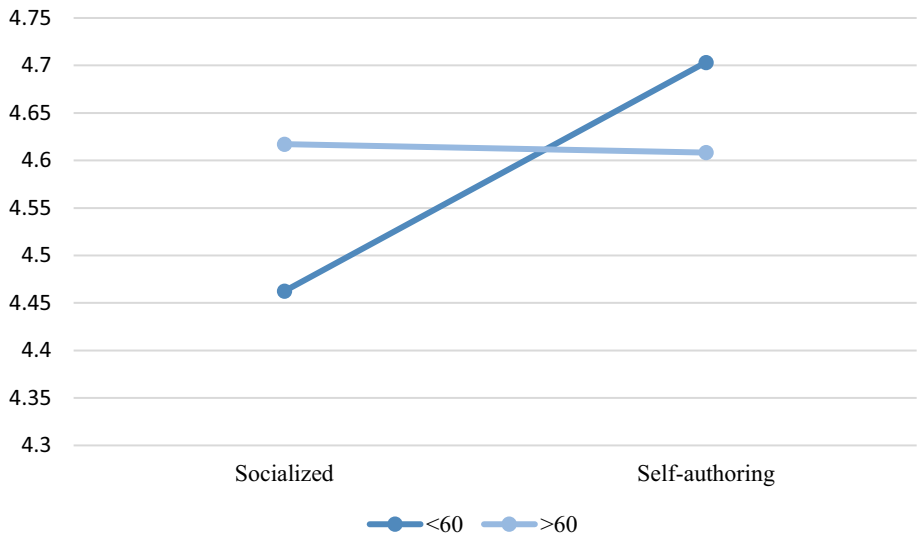
Fig. 2 Moderation of the relation between socialized and self-authoring narratives by with a dichotomous age variable

The findings indicated that psychological maturity was only positively related to SWB for those who were in the younger age group ($b = .23$, $t(211) = 3.66$, $p < .001$) and not for those in old age ($b = -.01$, t $(211) = -.08$, $p = .94$). Thus, those in the young age group who had provided a narrative that was scored as self-authoring (more mature) had higher SWB than those who had narratives that were scored as socialized (less mature), while there was no difference in SWB scores for those with socialized or self-authoring narrative in the older age group.

We also explored if the moderating effect of age on the relation between psychological maturity and SWB was different with age as a continuous predictor. The result of the regression indicated a significant overall model with similar variance explained ($R^2 = .55$, $F(8210) = 31.69$, $p < .001$). In this model, the interaction term did not emerge as significant and did not account for any additional variance ($\Delta R^2 = 0.005$, $F(1210) = 2.41$, $p = .12$). The other notable difference in models with using age as a continuous predictor was that the coefficient of psychological maturity was higher ($b = .39$, $t(210) = 2.49$, $p = .014$) compared to the model with age as a dichotomous predictor.

5 Discussion

This study aimed to investigate the relation between psychological maturity, other eudaimonic personality factors, age group, and SWB. First, we hypothesized that psychological maturity was related to well-being. Second, we hypothesized that this relation was moderated by age, such that level of psychological maturity would significantly predicting SWB for those individuals who were in old age group. We found support for the first hypothesis but only partial support for the second. As for the second hypothesis, age did moderate the relation between psychological maturity and well-being, but not as we expected. Maturity

predicted well-being only for the younger mid-life adults, not older adults, whereas we had predicted the reverse, that maturity would predict well-being for the older adults.

5.1 Maturity and Well-Being

Our results indicate that the kind of narrative maturity that we studied—Kegan's self-authoring mind compared to socialized mind—is a significant predictor of SWB. Even though some theories of psychological maturity (notably Loevinger's theory of ego development) as well as empirical research have suggested that maturity and well-being are not related (Bauer and McAdams 2004; Bauer et al. 2015; Duffy et al. 2017). However, recently Fossas (2019) found a curvilinear relation between the present measure of maturity (Kegan's) and SWB, with SWB peaking at the maturity level of self-authoring mind.

Kegan's (1982) approach to maturity combines Piagetian complexity of thinking with Eriksonian concern for human welfare (of both the self and others). The structural complexity of thinking itself is theoretically orthogonal to content-focused concerns for humanistic versus materialistic/egoistic concerns (Bauer et al. 2019). Furthermore, Kalliris (2017) argues from a philosophical perspective that accounts of self-authorship are essential for a person's well-being. Here, self-authorship is understood as the "autonomous shaping of one's own life" and includes both a freedom from external interference as well as a positive freedom with a presence of options that one is free to choose (Arvanitis and Kalliris 2017). To be able to assess and make decisions regarding the available options, Kalliris (2017) argues it requires the necessary mental capacities, and these capacities need only to be moderately developed. Kalliris is not explicit in what the criterion for such a mental capacity should be, but briefly refers to adulthood as a requirement for this capacity. This contrast with Kegan's theory on self-authorship as a capacity, which might be required in adulthood, that considerable proportion of the adult population have not yet developed the capacity for (Kegan 1994). Our finding lends support for Kegan's argument, with about half of the narratives scored as socialized, while the other half were scored as self-authoring (see similar findings with ego development; e.g., Cohn 1998).

Following Kegan's (1994) analysis that the modern western society requires or demands, to larger extent, the capacity to be self-authoring, it is reasonable that this capacity emerged as a significant predictor of well-being in our findings. In addition, with our study conducted in the US, a culture that is widely considered individualistic (Hofstede 2001) and emphasizing autonomy and independence (Lu 2008), the significance of self-authorship for SWB is reasonable. However, a positive relation between autonomy and SWB have been found in cross-cultural studies as well (Inglehart et al. 2008; Ng 2015; Ng and Diener 2014; Ngamaba 2017; Welzel and Inglehart 2010).

Several theorists have proposed that the highest level of maturity may correspond to higher well-being (e.g., Loevinger and Blasi 1976; Maslow 1968). Bauer et al. (2011) found that those who scored at the two highest stages in Loevinger and Blasi (1976) ego development theory had higher levels of well-being compared to the lower stages. Bauer et al. (2011) emphasize that even though they found significant differences in well-being, their findings should be interpreted with caution, as few of their participants scored at the highest stages. We note that the most mature narratives in our study was those who could be scored as self-authoring, which is less mature than the highest stages in Kegan's, Loevinger's, and others' theories. As was expected we did not score any of the narratives in our study as self-transforming (which corresponds to Loevinger's autonomous and integrated stages), so it is impossible to know if this same trend

would hold here as well. However, Fossas (2019) study could indicate that this might not be the case, where the self-transforming mind was associated with lower scores on SWB than for the self-authoring mind.

5.2 Maturity and Well-being, Controlling for Traits and Motives

For Kalliris (2017), self-authorship is considered parallel to autonomy, and while he argues that it is an essential aspect of a person's well-being, he also points out that it is not "all there is to living well" (Kalliris 2017, p. 32). This is also evident in our finding that psychological maturity was just one of several significant predictors of SWB. This confirmed our first hypothesis that other well-known predictors would emerge as significant predictors of SWB. The personality traits extraversion and neuroticism were significant predictors in our regression model, with neuroticism being a moderate negative predictor, while extraversion was a minor positive predictor of SWB. This is in line with previous findings that these are the two strongest predictors of SWB (Steel et al. 2008). In a recent attempt exploring personality factors and autonomy's predictive ability of SWB, Olesen et al. (2015) found that autonomy was a stronger predictor of SWB than extraversion, while neuroticism was the strongest predictor. Although we had a different measure than Olesen et al. (2015), self-authorship as it is conceptualized by Kegan entails the emergence of autonomy (Fossas 2019), we observed the same trend in our results. That is, in our first model self-authoring narratives was also a stronger predictor than extraversion.

As for the eudaimonic measures of in our first regression model, authenticity was not a significant predictor of SWB. Whereas authenticity's significant bivariate correlation with SWB is consonant with previous research (Ariza-Montes et al. 2017; Robinson et al. 2013), we found that this relation no longer held when controlling for other variables in our model. The other eudaimonic predictors, experiential growth motivation and presence of meaning in life, held their relations to SWB (Bauer et al. 2015; Steger et al. 2006, 2011). Notably, these factors and psychological maturity were independent of each other in predicting SWB.

These findings support the notion that psychological maturity is relatively unique among eudaimonic predictors of SWB. That is, with self-authorship representing a capacity to generate an independent sense of who you are, what you believe and who you want to spend time with, it has similarities with authenticity. Like psychological maturity, the intrapersonal view of authenticity is concerned with the self, however we see differences in how the construction of self is viewed in the different theories. For example, one can have the experience of knowing oneself (one characteristic of authenticity), even if the self is primarily constructed by and dependent of others (characteristic of the socialized mind), or if the self is constructed independent of others (characteristic of self-authoring mind). Similarly, it is arguably possible to live according to one's values (another characteristic of authenticity), independent of whether these values are dependent or independent of others.

Furthermore, the narrative method itself likely played a role in the independence of psychological maturity in predicting SWB: Whereas the other measures involved self-report scales, the maturity measure involved personal narratives, in which the individuals were asked to think about an actual, lived event that was especially important in their lives. Context-rich meaning-making is part of the reason that narrative measures exhibit consistently strong incremental validity among other measures of personhood and well-being (Adler et al. 2016).

5.3 Age, Maturity, and Well-Being

Although age and SWB had a significant positive correlation, age did not emerge as a significant predictor of SWB when controlling for personality and eudaimonic factors. It is important to note that our regression models included either a tripartite or a dichotomous age predictor, and therefore could be argued as too rough of a predictor to discover any relation between the two phenomena. However, in a separate regression analysis with continuous-level chronological age as the predictor, we found the same non-significant relation between age and SWB when controlling for psychological factors like traits and motives.

In our regression model with a tripartite age predictor, there was not a significant interaction effect of age group and psychological maturity. However, when we plotted the results, we noticed a trend where there was a similar relation between maturity and SWB for the younger participants (those in young and mid age), while it was no apparent relation between maturity and SWB for old age participants. In our regression model (model 3) with a dichotomous age variable comparing younger (<60 years) and older (>60 years) participants, age did play an interactive role in the relation between maturity and SWB. Where age group moderated the relation between psychological maturity and SWB, as predicted. However, in our second hypothesis we had proposed that level of psychological maturity was especially important for the older age groups' SWB, but the results indicated that it was only important for the younger age group. We were surprised by this finding as we argued that the period of old age could include an extra demand for the capacity of self-authorship, and not having developed such capacity could have the potential of being "in over their heads." The rationale here was that if your daily life consistently requires a more mature form of meaning-making than one typically exhibits, then one's well-being will suffer. However, our findings are less surprising if we look to Kegan's (1994) examination of the demands from modern society on psychological maturity. Here Kegan focused almost exclusively on the period of adulthood, encompassing the younger age group in our study, and went into detail on how modern society demands the capacity to be self-authoring in adulthood. The period of old age was not given much attention in this book, but Kegan (1998) has since suggested that the demand for a self-authoring mind also extends to the period of old age. It is the mismatch between demand and capacity of psychological maturity than can have negative effects on well-being, and we argued above that in adulthood the environment could compensate for the lack of having developed the capacity for self-authorship. However, it might well be that the environment in adulthood contributes to the experience of being in over their heads. For example, adulthood seems more likely to include experiences of conflicts in what significant others and society expect from you in the role as a student, partner, parent, and worker. Such competing expectations might be difficult to resolve with a socialized mind as it entails being embedded in the values and expectations of others (Helsing and Howell 2014), rather than having an independent self that can mediate the conflict, which is a characteristic of the self-authoring mind. If the period of old age has fewer social norms and expectations (Freund et al. 2009), it could mean that there are fewer experiences that demand a self-authoring mind and therefore fewer experiences of being in over one's head. In other words, based on our findings, level of maturity could be considered a buffer for young adults' SWB but not for that of older adults.

Furthermore, older adults may also have developed successful strategies for maintaining well-being that are unrelated to the psychological maturity dimension that we measured in our study. One example of successful strategy is found in the socioemotional selectivity

theory (Carstensen et al. 1999, 2003). According to this theory as on grows older the time horizon tend to be limited and ones goals therefore to shift towards those that can be "realized in the present and which tend to focus on savoring, emotional meaning, and satisfaction" (Carstensen and DeLiema 2018, pp. 7–8). This motivational shift has been one way to explain how increasing age is associated with better emotional balance (Steptoe et al. 2015), with fewer experiences of negative and more positive emotions (Löckenhoff and Carstensen 2004). Younger adults' relative lack in such capacities may put them, compared to older adults, more in a position of being "in over their heads."

Socioemotional selectivity theory (Carstensen et al. 1999) is consonant with narrative identity theory (McAdams and McLean 2013), particularly with regard to psychological maturity, age, and well-being (Pasupathi 2001). Older adults narrate their lives with heightened degrees of "autobiographical reasoning," which is a constellation of narrative meaning-making processes that features the integration of emotion-laden interpretations of important life events with one's broader understanding of self (Pasupathi and Mansour 2006). Measures of mature meaning-making in personal narratives have been shown to mediate the relation between measures of age and well-being, notably demonstrating incremental well-being beyond self-reported traits and motives (Bauer et al. 2005; King et al. 2000; Lilgendahl and McAdams 2011; for a review of incremental validity, see Adler et al. 2016). One reason that narrative measures predict well-being either better than or independently of self-report measures is that narrative reflect implicit, appraisals of personal motives and characteristics as they manifest in the context of people's lived events, rather than such appraisals in abstract, explicit, decontextualized self-reports.

On a methodological note, our study involved a novel approach to assess psychological maturity in large quantitative studies. We employed the SOI protocol to analyze shorter descriptions of participants reflecting on a significant highpoint in their life. Although the process of analysis is laborious and require detailed knowledge of Kegan's developmental theory, with good inter-rater reliability, we see the inclusion of this dimension is such large-scale studies as promising. However, further investigations and scrutiny is needed.

5.4 Limitation of Our Study

First, we had a correlational, cross-sectional design, which means that we are unable to make either causal or longitudinal inferences from our findings. At most we can say that psychological maturity is associated with SWB even when controlling for other eudaimonic constructs and big-five traits. Furthermore, we cannot claim to have studied or found "age effects," as our findings may reflect generational differences. Future studies should therefore employ longitudinal design to investigate this link. Second, our findings are limited to a Western, Educated, Industrialized, Rich and Democratic (WEIRD) populations. Further, our sample consisted exclusively of US college graduates, which makes generalizing the results to a larger population difficult. It is possible that the relation between psychological maturity and SWB could be moderated by culture and that a different relation could be found within a more collectivistic sample; however, Halvorsen (2016) did find a positive relation between maturity and well-being in a more collectivistic sample as well. Replications of our study with random and cross-cultural sample would fare stronger in generalizing the results to the general population. Third, in consideration of survey length we used a brief measure of personality with only two items per higher order traits. Even though the Ten-Item Personality Inventory has demonstrated adequate psychometric properties (Gosling et al. 2003), a more comprehensive measure of the big 5 could have provided

more reliable results. Fourth, although our analysis of the narratives demonstrated good inter-rater reliability, some nuance of the original SOI protocol was lost when having a single narrative, compared to interview data which garners several detailed descriptions (through continuing probing of the persons meaning making). This means that our measure of psychological maturity should be interpreted with caution and not seen as representing the complete picture of the persons level of maturity. Fifth, even though the measure was reliable, this does not give any indication about the measure's construct validity. As the study we selected our sample from (SALT) was not designed with the purpose of validating our process of scoring narratives with Kegan's measure, we were not able to include relevant additional measure to establish its validity. That said, two coders were able to establish inter-rater reliability using the coding protocol. Lastly, although we found a significant interaction effect of age group and psychological maturity, this was only significant in a model with a dichotomous age predictor. In other models with either a tripartite or continuous age predictor there were no significant interaction effect, which indicate that our results should be interpreted with caution in terms of any general age effect.

6 Conclusion

In this study, psychological maturity, assessed by scoring written narratives according the developmental theory of Robert Kegan, was a significant predictor of a SWB, even when controlling for other well-known predictors. In addition, this maturity moderated the relation between age group and SWB, such that level of maturity was related to SWB for younger and mid-life but not older adults. As this is a novel finding, we suggest that further research is necessary. Our employment of the SOI protocol to shorter narratives showed promise for using Kegan's measure of maturity with a wider range of personal narratives, particularly given the time-intensive nature of the SOI.

Appendix

Table 5 gives examples of participants' narratives of important experience(es), whether they were scored as socialized or self-authoring mind, and the reasoning behind the score.

Table 5 Examples of participants' narratives of important experience(es), whether they were scored as socialized or self-authoring mind, and the reasoning behind the score

Narrative	Description of an important experience from their periods at college	Psychological maturity score	Reasoning for why it was scored one way or another
1	I had several professors in the education department who were very encouraging. At one point during my student teaching career, a professor pointed out how well I was doing, and how a lot of the examples he used in other classes came from what I was doing in my experiences. This made me feel very capable, successful, and supported	Socialized	The experience of being successful and capable is defined by the teacher's evaluation of whether he/she is capable
2	I decided to pledge one of the local sororities […]. My roommate and I decided to pledge due to our knowledge of a couple of seniors in the group. After 2 weeks, I realized that this was not for me. There were two events that helped me see that I didn't need this to have friends. The first occurred in the common area when we were talking with some of the sisters, who then needed to sign our book that we had spent almost 15 min with one senior and we had what I felt was a nice conversation with some good sharing. When I asked her to sign my book, she said no, I hadn't "earned" her signature yet. Just shortly after that we were told that we needed to bring our homecoming date to the sorority house prior to the dance and they would "approve" of our choice and that we could only go to the dance with others from the sorority. I had a very good friend who was not pledging and with whom we were planning to double date. At that point I decided that I didn't need to be humiliated or treated poorly in order to fit in and have friends. This was a pivotal point in my life as I realized that I valued myself much more than to be treated badly in order to fit it. This helped me with my self-confidence and built my sense of independence. I think it was an event during my freshman year that set a tone for me that I continue to the this day - feeling good about being independent, treating everyone with respect and not feeling the need to "conform" in order to have good friends and relationships	Self-authoring	This excerpt describes the discovery or developmental capacity for self-authorship. Through the negative experience of needing validation from sorority she identifies this as a pivotal point for her now self-authoring self. "I value myself" not being dependent of others to know who she is. Her use of "approved" in quotes suggests a sense of autonomy and a mocking of the forces that limit autonomy. Can take relationships as object, i.e. she can reflect and examine what kind of relationships *she wants*

Table 5 (continued)

Narrative	Description of an important experience from their periods at college	Psychological maturity score	Reasoning for why it was scored one way or another
3	Before deciding about housing for our senior year, my group of friends had to decide on who would be in which house. We split ourselves up in the best way we could decide. From there, we each picked roommates. I wanted to room with Katie [names changed to protect confidentiality], and out of worry that Katie may have other plans, I confided in another friend, Karen, about my hopes. Karen assured me that Katie would probably love to room with me. After feeling a bit anxious about things, Karen's reassurance prompted me to be room-mates with Katie. This came about after years of friendship, time that I spent as an RA living without a roommate, to the deadlines for on-campus housing. It was great to be assured that Katie would want to be my roommate, because I cherished her friendship, and was so happy to hear that she felt the same. After spending our final year as roommates, we grew quite close, and in the past 5 years were living in the same city, enjoying more of life's adventures. I'm sure things would be extremely different if we hadn't shared a room at UD. I'm not sure what this says about me as a person. There are so many won-derful memories from UD, I simply picked one that seemed simple and specific enough	Socialized	Is subject to the other person's perspective on who he/she is. Anxious of Katie not liking her, assured by Karen. Her value in that relationship is defined by others, and they are held responsible for her feelings (e.g., to "assure" her of their friendship). Appears intertwined with others without being able to view them as separate autonomous entities. Also, the person knows that this is an important event, but does not hazard a guess at what it says about her

Table 5 (continued)

Narrative	Description of an important experience from their periods at college	Psychological maturity score	Reasoning for why it was scored one way or another
4	At our house on [centrally located street] senior year, we would often have several of our friends over before going out for the night. I remember one night toward the end of the year, we had the usual group of 4 or 5 girls over and we blasted our favorite songs on the living room stereo, jumping up and down shouting the lyrics. I jumped so hard on the couch I actually broke the middle cushion (which was hilarious to us all at the time). It was just so fun and carefree. We were all seniors and had plans for graduation in a few weeks. I formed some really meaningful friendships that year and I have a picture of that night which reminds me how great that year was with those girls. Thinking about it now, I miss that carefree feeling that I had at that time. With the responsibility that comes after graduation, I can no longer spend my nights like I did then, but thinking about that reminds me it's important to have good friends and let loose every once in awhile!	Self-authoring	The person holds somewhat contradicting feelings with both missing this carefree period as well as it informs her on aspects that she has determined herself to be important for her (having good friends and letting loose). The person contextualizes the time as youthful, indicating to the reader that they know the difference between what was funny then versus now
5	I introduced my girlfriend from home to my room mates, friends and fraternity brothers during a visit she made to [university]. I was proud to be with such a special woman and all of my friends were envious of me. She visited me at [university] to attend a formal year end banquet/dance sponsored by my fraternity and she got to watch me play football for [university]. We had been dating for about a year, I was a senior at [university] and this was the first opportunity she had to visit me at school. I married this special woman [decades] ago and we had navigated the trials and tribulations of life together since then. That was a very special weekend and we have supported each other through life	Socialized	The experience seems valued for how it gave him/her responses from others (positive), one way he/she knows she is a special woman is that others like her (envious of him). Proud to be with her because it says something about him/her? A self-authoring narrative would be less contingent on others evaluation of his/her girlfriend

Table 5 (continued)

Narrative	Description of an important experience from their periods at college	Psychological maturity score	Reasoning for why it was scored one way or another
6	1. When I arrived on campus in [year] drinking age for 3.2 beer was 18. Party with beer on campus in front of old bookstore [...]. Great feeling! (Now: I guess that was a natural feeling after having come from a 21 years old state—[...]. It is ironic that the temporary [religious place] is now at the old bookstore. I attended [religious service] there several weeks ago. I find it part of God's humor!) 2. Finding out when I went to [my dorm] as a Freshman that I had an accent—never knew we had one in [home city]! [still find it gratifying!] 3. Moving into the [student neighborhood] with 6 other guys from [home city]—one of the greatest events of my life [still treasure that time and still stay in touch with several old roomates] 4. Discovering that I wanted to be a teacher instead of a medical doctor [Perhaps it was just being away from home or perhaps the environment and classes at [this university], but my greatest discovery'!]	Self-authoring	This story charts the narrator's development of his self-authoring way of thinking. The person reflects on why these episodes were important. The concerns are not with others liking him or other forms of social status, but more about the intrinsic value of the experiences themselves as well as becoming who he is. The self is defined and relies on internal authority

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