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RESEARCH PAPER

Pursuing Pleasure or Virtue: The Differential and Overlapping Well-Being Benefits of Hedonic and Eudaimonic Motives

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Abstract Hedonia (seeking pleasure and comfort) and eudaimonia (seeking to use and develop the best in oneself) are often seen as opposing pursuits, yet each may contribute to well-being in different ways. We conducted four studies (two correlational, one experience-sampling, and one intervention study) to determine outcomes associated with activities motivated by hedonic and eudaimonic aims. Overall, results indicated that: between persons (at the trait level) and within persons (at the momentary state level), hedonic pursuits related more to positive affect and carefreeness, while eudaimonic pursuits related more to meaning; between persons, eudaimonia related more to elevating experience (awe, inspiration, and sense of connection with a greater whole); within persons, hedonia related more negatively to negative affect; between and within persons, both pursuits related equally to vitality; and both pursuits showed some links with life satisfaction, though hedonia's links were more frequent. People whose lives were high in both eudaimonia and hedonia had: higher degrees of most well-being variables than people whose lives were low in both pursuits (but did not differ in negative affect or carefreeness); higher positive affect and carefreeness than predominantly eudaimonic individuals; and higher meaning, elevating experience, and vitality than predominantly hedonic individuals. In the intervention study, hedonia produced more well-being benefits at short-term follow-up, while eudaimonia produced more at 3-month follow-up. The findings show that hedonia and eudaimonia occupy both overlapping and distinct niches within a complete picture of well-being, and their combination may be associated with the greatest well-being.

Keywords Pleasure · Hedonism · Eudaimonia · Virtue · Well-being · Elevation

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1 Introduction

A fundamental question in human life concerns how to achieve personal well-being.[1] Since ancient times, answers to this question have often been of two types—the hedonic view and the eudaimonic view (Ryan and Deci 2001). In the *hedonic* view, well-being is achieved through the pursuit of pleasure, enjoyment, and comfort. Hedonic ends range from physical pleasures and comforts to emotional-cognitive ones, such as enjoyment of social interaction or art. For example, Aristippus in the fourth century BCE argued that the goal of life is pleasure, regardless of its source. In contrast, Aristotle in the fourth century BCE (*The Nichomachean Ethics*, reprinted 2001), viewed pleasure-seeking as a vulgar way of life. He argued that well-being is achieved through *eudaimonia*—seeking to use and develop the best in oneself, in line with one's deeper principles. Examples of eudaimonia include acting to the best of one's ability, exercising virtues like kindness or gratitude, and developing one's potential.

Among psychologists today, the hedonic-eudaimonic distinction continues to be debated and discussed (e.g., Kashdan et al. 2008; Ryan and Huta 2009). Towards the hedonic end, researchers such as Kahneman (1999) argue that well-being consists of the pleasantness of one's moments. In contrast, Ryff (1989), Waterman (1993) and others argue that well-being involves applying and developing oneself to the fullest. Yet remarkably little research has compared hedonia with eudaimonia to determine how each does in fact relate to well-being, or to determine how their combination relates to well-being. These analyses were the aim of our research.

Before outlining our specific aims, let us discuss our approach to defining and manipulating eudaimonia and hedonia, and how this approach builds upon and differs from previous research.

1.1 How Eudaimonia and Hedonia are Defined

In this set of studies we assess eudaimonia and hedonia as *motives* for activities: seeking pleasure or comfort, or seeking to use or develop the best in oneself, whether or not these aims are achieved. Also, for any given activity that a person is pursuing, we inquire about both their hedonic and eudaimonic motives. This approach serves several purposes: (1) it allows us to assess underlying motives for activities rather than the surface content of activities; (2) it distinguishes eudaimonia and hedonia from well-being outcomes, so that these motives can be studied as independent variables in predicting well-being; (3) it lets us discuss eudaimonia and hedonia in parallel terms, i.e., as motives in both cases; (4) it allows us to assess eudaimonia and hedonia simultaneously, and not as mutually exclusive pursuits, given that many activities involve both aims; and (5) it allows us to study both eudaimonia and hedonia in relation to the same set of well-being outcomes (e.g., subjective well-being, vitality, sense of meaning), rather than grouping outcomes beforehand into hedonic and eudaimonic categories.

As discussed by Ryan et al. (2008), in most past research, eudaimonia and hedonia have been either operationalized in non-parallel terms (with eudaimonia discussed as a way of life, which we consider a predictor, but hedonia discussed in terms of well-being, which we consider an outcome), treated as mutually exclusive, and/or conceptualized as mixtures of

[1] In this paper, we use the term "well-being" broadly to refer to one or more subjectively experienced states or evaluations of one's life that could be rated as desirable or undesirable, such as positive affect, negative affect, life satisfaction, inspiration, awe, transcendence, sense of meaning, feeling carefree, and vitality.

ways of life and well-being. For example, some researchers have discussed eudaimonia as a way of behaving (such as openness to experience), while discussing hedonia in terms of well-being outcomes (such as life satisfaction) (e.g., Vittersø 2003, 2004). We agree that this distinction characterizes pursuits as seen through the eyes of individuals in eudaimonic versus hedonic mindsets—in a hedonic mindset, people focus on the well-being to be obtained at the end of a pursuit; in a eudaimonic mindset, people focus more on the quality of the activity itself, and not its end result (Fowers et al. 2009). However, we believe that both mindsets can also be described as motives, and thus defined in more symmetrical terms.

Our approach is also related to, yet distinct from, research by Ryff and by Waterman. Ryff and colleagues use the *Psychological Well Being* scale to assess eudaimonia (e.g., Schmutte and Ryff 1997). In our view, this measure assesses both ways of living (e.g., "I judge myself by what I think is important, not by the values of what others think is important") and well-being outcomes (e.g., "When I look at the story of my life, I am pleased with how things have turned out"). Waterman and colleagues operationalize both eudaimonia and hedonia as well-being variables (Waterman 1993; Waterman et al. 2008). In the current study we use the terms "eudaimonia" and "hedonia" to represent motives for acting, that is, as independent variables so as to study them as predictors of a wide variety of well-being outcomes.

In a related approach, Steger et al. (2008) recently presented two diary studies that used checklists of behaviors the authors had pre-classified as representing either eudaimonic pursuits (e.g., volunteering time, expressing gratitude, listening carefully to another's point of view) or hedonic pursuits (e.g., having sex purely for pleasure, eating to excess, getting drunk, relaxing by watching television or playing videogames). They found that their eudaimonic checklist had more enduring effects on well-being into the next day, as indexed by positive affect, negative affect, life satisfaction, and meaning. In preliminary research, we employed a similar approach, but discovered that different people could have very different motives for the same activity. We concluded that assessing motives might more directly address peoples' underlying orientations than assessing the surface content of their activities. Directly assessing motives may also reduce the effects of confounding variables—for example, some of the items on the hedonic checklist were not only hedonic but also represented a lack of self-regulation (e.g., eating to excess, getting drunk). Furthermore, employing separate checklists to assess eudaimonia and hedonia treats these concepts as mutually exclusive, even though we have found that some activities can be high in both hedonic and eudaimonic motivations, including playing a musical instrument, doing something artistic, and playing a sport (Huta 2007). Accordingly, in our current studies, participants themselves rated their activities in terms of both hedonic and eudaimonic motives. This subjectivist approach is also interesting because some theorists have argued that eudaimonic theory is inherently elitist (Kashdan et al. 2008) by imposing a model of well-being on others. In the present studies we allow people to tell us themselves about their hedonic and eudaimonic aims, and empirically examine the linkages of these motives to well-being.

To our knowledge, only one study has assessed eudaimonia and hedonia as we do: in parallel terms, as independent variables, and as variables that are not mutually exclusive. Peterson et al. (2005) introduced their *Orientations to Happiness* scale, a self-report measure assessing individual differences in ways of life and priorities. A subscale called *the Life of Meaning* was their index of eudaimonia (e.g., "in choosing what to do, I always take into account whether it will benefit other people," "I have spent a lot of time thinking about what life means and how I fit into its big picture"); a subscale called *the Life of*

Pleasure was their index of hedonia (e.g., "I love to do things that excite my senses," "I agree with this statement: 'Life is short eat dessert first.'"). They found that both eudaimonia and hedonia related to life satisfaction. They also found support for Seligman's (2002) hypothesis that the full life (being high in both eudaimonia and hedonia) leads to greater life satisfaction than either pursuit alone or the empty life (being low in both eudaimonia and hedonia). Our research extends this work by examining both between-person (i.e., trait-level) and within-person (i.e., state-level) relations with well-being, assessing a greater variety of well-being outcomes, and including an intervention to assess causal relations.

In sum, in this paper we examine eudaimonia and hedonia as motives, which reduces several of the conceptual pitfalls identified by Ryan et al. (2008). Our paper also directly addresses several limitations in the eudaimonia/hedonia literature that are discussed in a general critique by Kashdan et al. (2008). These include not only the blurring of the distinction between values/goals and resulting well-being, but also the need to empirically identify differential patterns of well-being linked with eudaimonia versus hedonia, and the error of assuming a priori that subjective well-being (positive affect, negative affect, and life satisfaction) belongs in the hedonic camp, rather than empirically testing how it relates to both hedonic and eudaimonic aims.

1.2 How Eudaimonia and Hedonia are Manipulated

A number of other programs of research also informed our work. Seligman et al. (2005) conducted a 1-week intervention comparing several eudaimonic activities (e.g., writing down three of one's blessing's every day, visiting someone to express gratitude, using a personal strength in a new way each day) with a placebo activity (writing about early memories each day). Compared to the placebo condition, those in the counting blessings and using strengths conditions had greater increases in happiness at 6 month follow-up. In addition, their degree of increased well-being was related to how much they continued the eudaimonic activity beyond the 1-week intervention. Several other studies have shown that interventions can raise well-being, with most focusing on eudaimonic activities such as gratitude, kindness, and forgiveness (e.g., Emmons and McCullough 2003; Lyubomirsky et al. 2005; McCullough et al. 2000), though some have included hedonic activities such as savoring (Seligman et al. 2006). We also conducted a eudaimonic intervention, but rather than assigning a specific kind of activity, we had participants design their eudaimonic activities themselves. This allowed us to study eudaimonia more generally. It also increased the likelihood of autonomy in the participants—past findings show that participants derive greater well-being from an intervention if they feel that it is freely chosen (Sheldon and Lyubomirsky 2007). Further, our intervention study included a hedonic condition so that we could compare the effects of both kinds of pursuits.

1.3 Hypotheses

Rather than siding with the hedonic view or the eudaimonic view, we expected that both pursuits contribute to well-being, as several authors have suggested (e.g., McGregor and Little 1998; Ryan and Deci 2001; Seligman 2002). Further, we expect that people high in both types of motives would experience greater well-being than people who were mainly hedonically oriented, mainly eudaimonically oriented, or with neither pursuit in their lives.

We expected hedonia and eudaimonia to promote constellations of well-being outcomes that were partly overlapping but also in some aspects distinct. Our specific hypotheses, detailed below, derived primarily from the past studies we have reviewed and from a consideration of the different functions that hedonia and eudaimonia may serve. In addition, our hypotheses were informed by our interest in a number of well-being concepts that we expected to provide valuable information, both on the eudaimonia-hedonia distinction and on well-being in general, beyond the information provided by the indices assessed most often—positive affect, negative affect, and life satisfaction (Diener et al. 1999). These additional outcomes included: a sense of *meaning*, which reflects the degree to which one personally resonates with, comprehends, and values one's activities and experiences, and which we considered essential to a well-rounded assessment of well-being, as several others have proposed (Battista and Almond 1973; Reker and Fry 2003; Ryff and Singer 1998; Steger et al. 2006); subjective *vitality* (Ryan and Frederick 1997), which differs from affect in that it reflects a sense of energy and aliveness; what we called *elevating experience*, including inspiration (Haidt 2000; Thrash and Elliot 2003), awe (Keltner and Haidt 2003), and transcendence or sense of connection with a greater whole (Csikszentmihalyi 1990), all of which involve feeling connected with and elevated to a broader level of functioning, and which represent the much neglected "higher" range of well-being experiences; and *carefreeness*, which we felt should be included because it may be especially tied to hedonia.

The following are our hypotheses regarding the well-being effects of hedonia. Given that hedonia is the pursuit of feeling good and relaxation, we expected that it would succeed in fulfilling these aims, on average (though we recognize that the explicit pursuit of pleasure can sometimes rob experiences of enjoyment, as shown by Schooler et al. 2003). We expected that a major function of hedonia may be emotional self-regulation, aimed at restoring one's normal level of affect after it has been disrupted (Vittersø et al. 2009), or enhancing one's affect, which in turn has a variety of emotional, cognitive, and interpersonal benefits (Fredrickson 2001; Lyubomirsky et al. 2005). Thus, we expected hedonic pursuits to raise *positive affect* and reduce *negative affect*. Eudaimonia may also influence these emotions—perhaps indirectly through other forms of well-being (Waterman 1993)—but we expected it to have a weaker effect because it is not directly aimed at achieving them.

In addition, because our definition of hedonia includes the pursuit of relaxation, we expected that it is used for a certain form of cognitive-emotional self-regulation, namely, a release from concerns and worries. We therefore expected hedonia to be more effective than eudaimonia at producing freedom from concerns, or what we called *carefreeness*.

We also expected hedonia, whether it involves the pursuit of pleasure or the pursuit of comfort/relaxation, to restore and promote a sense of subjective *vitality* (Ryan and Frederick 1997). When aimed at relaxation, hedonic activity should restore a person's level of physical and consequently psychological energy. When aimed at pleasure-seeking, hedonia often involves activities that excite the senses and so should, on average, also raise feelings of aliveness. We expected eudaimonia to also foster vitality, as described below, and thus did not necessarily expect hedonia to have the stronger impact on this outcome.

We expected eudaimonia to fulfill the person in rather different ways. Given that eudaimonia involves efforts to align one's actions with one's values, it may foster a sense that those actions have indeed had *meaning*. Other authors have similarly linked meaning with eudaimonia-like concepts (e.g., King and Napa 1998; McGregor and Little 1998; Ryan and Deci 2001; Ryff and Singer 1998; Seligman 2002; Steger et al. 2008). In our work, we operationalized meaning as a well-being state, rather than a way of life as it had

most often been construed, so that we could study it as the outcome of eudaimonia and/or hedonia. We did not necessarily expect hedonia to have an impact on meaning, as hedonic pursuits may or may not connect with larger values.

Since eudaimonia is oriented towards excellence and growth, we also expected it to open people to states that uplift them and stretch them beyond their usual boundaries. Maslow (1970) similarly argued that self-actualization, a concept closely related to eudaimonia, is associated with more frequent peak experiences, where a person feels awe, elevation to a higher level of awareness, and a connection with some greater whole. Thus, we expected eudaimonia to be associated with *elevating experience*. We expected hedonia to relate less strongly to elevating experience, as it is not directly aimed at personal growth.

We also expected eudaimonia to relate to subjective *vitality*. The pursuit of excellence and growth requires the activation and intense application of one's abilities, and thus may produce a sense of being intensely alive. As noted earlier, hedonia was also expected to be associated with vitality, because many hedonic pursuits may feel activating and/or replenishing.

We expected both eudaimonia and hedonia to relate to *life satisfaction*, based on the findings of Peterson et al. (2005), and also based on the nature of life satisfaction, which may be a non-specific global evaluation of one's of well-being (Ryan and Huta 2009).

Finally, based on the work of Peterson et al. (2005), we predicted that people with high levels of both eudaimonia and hedonia would experience the greatest well-being. Specifically, we expected the full life to be associated with higher levels on all the well-being variables than the empty life. In addition, based on the specific forms of well-being we expected to relate to eudaimonia and hedonia, we expected the full life to be linked with higher positive affect, carefreeness, vitality, and life satisfaction, and lower negative affect, than a life only focused on eudaimonia; and we expected the full life to be linked with higher meaning, elevating experience, vitality, and life satisfaction than a life focused only on hedonia.

In sum, therefore, we predicted that hedonia would relate more to positive affect, negative affect (negatively), and carefreeness; that eudaimonia would relate more to meaning and elevating experience; that both hedonia and eudaimonia would relate to vitality and life satisfaction; and that people high in both hedonic and eudaimonic motivation would have greater degrees of certain forms of well-being than other individuals.

In this paper, we present the findings of four studies, each of which tested these hypotheses. Study 1 introduces our hedonia/eudaimonia and well-being measures, and performs an initial test of the correlations between these at the between-person level (i.e., when treating them as individual differences); Study 2 tests briefer versions of the well-being scales, to set the Stage for Studies 3 and 4 where these are needed, and includes a second replication of the between-person correlations; Study 3 uses experience-sampling to examine the links of eudaimonia/hedonia with well-being at both the between-person level and the within-person level (i.e., when treating them as momentary states); and Study 4 uses an experimental manipulation with 3-month follow-up to confirm the causal effects of eudaimonia and hedonia on well-being.

2 Study 1

We wished to study eudaimonia and hedonia as motives both between persons (i.e., as typical degrees of eudaimonia/hedonia that vary from person to person) and within persons (i.e., as state degrees of eudaimonia/hedonia that vary from moment to moment). We thus

created eudaimonia and hedonia items that could be administered at both levels of analysis. In addition, our hypotheses included a number of well-being concepts that have received little empirical attention and for which we had to create our own measures—carefreeness, awe, inspiration, transcendence, and meaning (as an outcome state). Study 1 therefore had three aims: to test whether the eudaimonic and hedonic items formed distinct and coherent groups; to test whether the new well-being items separated into distinct and coherent groups, and whether these groups were distinct from previously studied constructs, including positive affect, negative affect, life satisfaction, and vitality; and finally to determine the between-person relationships of different well-being variables with eudaimonia and hedonia.

2.1 Method

2.1.1 Participants

Participants were 300 undergraduates at a private northeastern US university. They were 74% female; mean age was 19.7 (SD = 1.3); 71% were White, 16% Asian, 5% Black, 4% Hispanic, 2% Middle Eastern, 2% East Indian/Pakistani, and 1% of mixed ethnic origin; and 53% were psychology majors. Analyses showed that females were higher in negative affect ($t = 2.27$, $p < .05$) and lower in carefreeness ($t = 2.19$, $p < .05$) than males; age was negatively related to carefreeness ($r = -.13$, $p < .05$); and Whites had higher life satisfaction ($t = 4.75$, $p < .01$) and positive affect ($t = 2.02$, $p < .05$) than non-Whites. None of the four demographic variables showed relationships with eudaimonia or hedonia.

2.1.2 Procedure

Participants completed the study on a research website used by the department of psychology, and identified themselves using their email address. They received course credit for completing the study, and then their email addresses was deleted from our database.

2.1.2.1 Hedonic and Eudaimonic Motives for Activities The instructions to this measure read: "To what degree do you typically approach your activities with each of the following intentions, whether or not you actually achieve your aim?" Participants gave ratings on various eudaimonic and hedonic motives, which were intermixed. The four eudaimonic motives were "Seeking to pursue excellence or a personal ideal?," "Seeking to use the best in yourself?," "Seeking to develop a skill, learn, or gain insight into something?," and "Seeking to do what you believe in?" The five hedonic motives were "Seeking enjoyment?," "Seeking pleasure?," "Seeking fun?," "Seeking relaxation?," and "Seeking to take it easy?" The items were rated from 1 (not at all) to 7 (very much). Cronbach alphas will be reported in the Results section after testing the distinctness of the two scales.

2.1.2.2 Well-Being All of the following variables were rated by participants with respect to themselves "typically" on seven point Likert scales. *Positive affect* (e.g., "happy," "enjoyment/fun") and *negative affect* (e.g., "unhappy," "worried/anxious") were assessed with the nine items developed by Diener and Emmons (1984). Cronbach alphas in this study were .89 for positive affect, .84 for negative affect. *Life satisfaction* (e.g., "I am satisfied with my life") was assessed using the five-item *Satisfaction With Life Scale*

(Diener et al. 1985). Alpha was .88. *Vitality* (e.g., "I have energy and spirit," "I feel energized") was assessed using the six-item version of the trait *Subjective Vitality Scale* from Bostic et al. (2000), which omits one item from the scale first developed by Ryan and Frederick (1997). The Bostic et al. version correlates .98 with the original and produces a slightly better-fitting model. Alpha was .93. To assess *meaning*, we created our own scale. As noted earlier, most existing measures of meaning assess it as a way of life (e.g., having purpose and a framework for interpreting events) rather than an outcome state (i.e., being left with a sense that one's pursuits have been meaningful). Though a measure has been developed which treats meaning as an outcome (Steger et al. 2006), it reflects one's life overall, and we wished to have a measure that could be used both between and within persons. We asked participants to rate how they typically felt about their activities and experiences, using the following 12 items: "meaningful," "valuable," "precious," "full of significance," "something I could treasure," "dear to me," "playing an important role in some broader picture," "making a lot of sense to me," "I could see where they fit into the bigger picture," "I could see how they all added up," "they contributed to various aspects of myself," and "they contributed to my community and broader world." Because the states of *elevating experience* have received little empirical attention, we created items to assess them: awe was represented by five items, "in awe," "deeply appreciating," "emotionally moved," "in wonder," and "profoundly touched by experiences"; inspiration by four items, "inspired," "morally elevated," "enriched," and spiritually uplifted"; and transcendence by four items "connected with a greater whole" "part of something greater than myself," "part of some greater entity," and "like I was in the presence of something grand." Finally, carefreeness is also a concept that has received little study, so we created six items to assess it, "carefree," "free of concerns," "detached from my troubles," "easygoing," lighthearted" and "happy-go-lucky." Cronbach's alphas for the scales we created are reported below, after testing their distinctness. The life satisfaction, vitality, and meaning items were administered as separate questionnaires; all of the other well-being items were intermixed on a single questionnaire.

2.1.2.3 Presence of Meaning in Life Since the presence of meaning at the between-person level has been previously assessed by Steger et al. (2006), we included their scale for construct validation of our meaning measure. The scale consists of five items, such as "I understand my life's meaning," and "my life has a clear sense of purpose," rated from 1 (absolutely untrue) to 7 (absolutely true). Alpha in the study was .88.

2.2 Results and Brief Discussion

2.2.1 Principal Components Analyses of the Eudaimonia and Hedonia Items

Exploratory Principal Components Analysis (PCA) was conducted to determine whether the eudaimonia and hedonia items on the HEMA separated as expected. Two factors had eigenvalues above 1, and the scree plot also clearly indicated a two-factor solution. The two factors accounted for 67% of the variance. Oblique rotation was considered, because we expected some correlation between eudaimonia and hedonia, but this rotation is less reliable than orthogonal rotation unless the items separate into tight groups, so that the axes can be clearly fitted through the groups. We therefore initially applied Varimax rotation and requested a component plot. The plot showed that the items did separate into two clear groups, and thus oblique rotation was justified. Following Direct Oblimin rotation

Table 1 Factor loadings of items designed to assess hedonia (Factor I) and eudaimonia (Factor II)

	Factor I	Factor II
Seeking to take it easy	**.84**	−.33
Seeking fun	**.83**	.12
Seeking enjoyment	**.80**	.19
Seeking pleasure	**.76**	.22
Seeking relaxation	**.67**	.06
Seeking to pursue excellence or a personal ideal	−.05	**.84**
Seeking to develop a skill, learn, or gain insight into something?	−.04	**.82**
Seeking to use the best in yourself	.07	**.80**
Seeking to do what you believe in	.23	**.68**

Factor loadings of .40 or greater are indicated in bold

(Delta = 0), all items separated cleanly onto eudaimonia and hedonia factors, as shown in the pattern matrix in Table 1. Eudaimonia and hedonia scales were created by taking means of relevant items; alphas were .82 and .85, respectively. Thus, the HEMA scales not only confirmed the distinction between eudaimonia and hedonia, but also had good reliabilities for our research. The correlation between the hedonia and eudaimonia scales was $r = .36$ ($p < .01$), and between the obliquely rotated factors was $r = .30$, indicating that people who are highly eudaimonic also have some tendency to be highly hedonic.

2.2.2 *Principal Components Analyses of the Well-Being Items*

To have an adequate ratio of participants to variables (Hair et al. 1998, recommend a ratio of ten to one), we performed PCA of the well-being items in two stages. First, we analyzed only the 31 new well-being items we created, and then we analyzed the seven scales representing all of the well-being concepts in the study. In the first PCA, five factors had eigenvalues above 1; the scree plot did not have any clear notches and thus did not assist interpretation in this case. We initially extracted five factors, and used Varimax rotation. Although we did expect some correlation between the well-being concepts, the items did not cluster neatly enough to justify oblique rotation; we therefore interpreted the more robust Varimax rotated solution. The carefreeness items loaded alone on one factor, the meaning items loaded on two factors with half the items loading substantially (i.e., above an arbitrary cut-off of .40) on both factors, and the elevating experience items loaded on two factors with a third of the items loading substantially on both factors. For the sake of parsimony and theoretical clarity, we then extracted three factors, which explained 58% of the variance. The carefreeness items loaded alone on one factor, the meaning items loaded alone on one factor, and the elevating experience items loaded primarily on one factor with a third of the items having secondary loadings on the meaning factor. (Note that the same pattern of findings appeared even when we did employ oblique rotation, using Direct Oblimin, Delta = 0.) This was satisfactory evidence for the distinction between the concepts of carefreeness, meaning, and elevating experience, and for treating awe, inspiration, and transcendence together as a single higher-order construct called elevating experience. We therefore created scales for carefreeness, meaning, and elevating experience by taking means of relevant items; alphas were .85, .94, and .93, respectively.

In the second PCA, we analyzed the seven scale scores for all the well-being concepts: positive affect, negative affect, life satisfaction, vitality, carefreeness, meaning, and

elevating experience. Only one factor had an eigenvalue exceeding 1 (4.19), but a second factor had an eigenvalue close to 1 (.95) and quite far from the third eigenvalue (.64). Because we theoretically expected some distinction between well-being concepts, we extracted two factors. These accounted for 73% of the variance. After Varimax rotation, life satisfaction, negative affect, and carefreeness cleanly loaded on the first factor; meaning and elevating experience cleanly loaded on the second factor; and positive affect and vitality loaded similarly on both factors. Thus, the two-factor solution indicated some subtle distinctions: meaning and elevating experience were distinct from previously assessed well-being concepts, supporting their study as outcomes in their own right. Although carefreeness loaded with well-established well-being concepts, we felt that it has a cognitive element that is not adequately captured by measures of affect or life satisfaction, and that may be particularly aligned with hedonic activity. We therefore retained carefreeness as a well-being concept and report analyses with this variable.

The correlation of our between-person measure of meaning and the Steger et al. (2006) scale was $r = .64$ ($p < .01$), providing construct validation of our meaning scale.

2.2.3 *Relationships of Eudaimonia and Hedonia with Distinct Sets of Well-Being Variables*

Table 2 presents zero-order correlations of eudaimonia and hedonia with each well-being variable. It also reports paired-correlation *t*-tests comparing the magnitudes of correlations for eudaimonia versus hedonia. The results for Study 1 appear in the first column, in the first row of every cell.

Hedonia related more to carefreeness and positive affect than did eudaimonia, though it did not relate more negatively to negative affect. Eudaimonia related more to meaning and elevating experience. And both eudaimonia and hedonia related to vitality and life satisfaction, to about equal degrees. Thus, nearly all of our predictions were supported, suggesting that eudaimonia and hedonia have strengths is somewhat different well-being domains.

2.2.4 *Testing the Full Life Hypothesis*

Finally, we performed a MANOVA comparing four groups of individuals on each of the well-being variables: those with a full life (above the median on both eudaimonia and hedonia, $N = 99$), those with a predominantly eudaimonic life (above the median on eudaimonia, but below the median on hedonia, $N = 49$), those with a predominantly hedonic life (above the median on hedonia, but below the median on eudaimonia, $N = 56$), and those with an empty life (below the median on both eudaimonia and hedonia, $N = 83$) (the total was 287, and not 300, due to list-wise deletion). The overall model was highly significant (for Wilks' Lambda, $F = 8.53$, $p = .000$).

The results appear in the top row of each cell in Table 3. Group means with different superscripts were significantly different in post hoc Scheffé tests; well-being variables without superscripts had non-significant univariate *F* tests. Our prediction that the full life would be associated with higher levels of all forms of well-being than the empty life was supported in all cases except negative affect. As predicted, we found that individuals with the full life reported greater positive affect and carefreeness than predominantly eudaimonic individuals, though they did not report greater vitality or life satisfaction, or lower negative affect. And individuals with the full life had greater meaning, elevating experience, and vitality than predominantly hedonic individuals, though they did not have greater

Table 2 Between-person and within-person correlates of eudaimonia and hedonia with well-being

	Between-person correlations			Within-person correlations		
	Eudaimonia	Hedonia	*t*-value	Eudaimonia	Hedonia	*t*-value
Hedonia						
Study 1	.36**					
Study 2	.37**					
Study 3	.46**			−.28		
Study 4	.09			−.04		
Positive affect						
Study 1	.29**	.44**	−2.58**			
Study 2	.23**	.30**	−1.18			
Study 3	.24*	.29**	−.48	−.04	.69**	−6.43**
Study 4	.23*	.51**	−2.58*	.11	.62**	−4.78**
Negative affect						
Study 1	−.06	−.16**	1.54			
Study 2	−.14*	−.07	−1.12			
Study 3	.18	.03	1.40	.08	−.33**	2.70**
Study 4	.03	−.32**	2.86**	.03	−.35**	2.94**
Carefreeness						
Study 1	.17**	.37**	−3.28**			
Study 2	−.02	.12*	−2.25*			
Study 3	.03	.29**	−2.50*	−.19	.58**	−5.88**
Study 4	−.01	.34**	−2.88**	.06	.59**	−4.78**
Meaning						
Study 1	.58**	.32**	4.91**			
Study 2	.39**	.26**	2.26*			
Study 3	.19	.17	.19	.56**	.01	4.22**
Study 4	.43**	.25**	1.59	.44**	.13	2.53*
Elevating experience						
Study 1	.47**	.20**	4.66**			
Study 2	.45**	.10	6.25**			
Study 3	.42**	.16	2.62**	.19	.20*	−.07
Study 4	.58**	.13	4.29**	.45**	.27**	1.54
Vitality						
Study 1	.38**	.31**	1.18			
Study 2	.33**	.18**	2.53*			
Study 3	.25*	.28**	−.29	.20*	.29**	−.61
Study 4	.31**	.32**	−.09	.23*	.42**	−1.58
Life satisfaction						
Study 1	.26**	.31**	−.81			
Study 2	.23**	.09	2.29*			
Study 3	.09	.25*	−1.51			
Study 4	.11	.18	−.55			

T-tests for paired correlations indicate whether the correlations for eudaimonia versus hedonia were significantly different

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

Table 3 Well-being means for individuals with different combinations of eudaimonia and hedonia

	Full life: means for people with high Eud. & high Hed.	Eudaimonic life: means for people with high Eud. & low Hed.	Hedonic life: means for people with high Hed. & low Eud	Empty life: means for people with low Eud.& low Hed.
Positive affect				
Study 1	5.17[a]	4.66[b,c]	5.02[a,b]	4.20[c]
Study 2	5.16[a]	4.64[b]	4.69[b]	4.45[b]
Study 3	5.44[a]	5.08[a]	5.38[a]	4.89[a]
Study 4	5.16[a]	4.56[a,b]	5.00[a]	4.35[b]
Negative affect				
Study 1	3.57	3.77	3.35	3.77
Study 2	3.15	3.16	3.55	3.39
Study 3	2.79	3.23	2.73	2.75
Study 4	3.63[a,b]	3.73[a,b]	3.07[a]	3.91[b]
Carefreeness				
Study 1	4.05[a]	3.25[b]	3.99[a]	3.34[b]
Study 2	3.57[a]	3.06[b]	3.30[a]	3.47[a]
Study 3	3.60[a,b]	3.13[a,b]	3.85[a]	2.93[b]
Study 4	2.80[a,b]	2.45[b]	3.27[a]	2.60[a,b]
Meaning				
Study 1	5.16[a]	5.06[a]	4.39[b]	3.93[c]
Study 2	5.64[a]	5.37[a]	4.75[b]	4.65[b]
Study 3	5.42	5.28	5.42	5.05
Study 4	5.67[a]	5.10[a,b]	4.93[a,b]	4.68[b]
Elevating experience				
Study 1	4.51[a]	4.21[a]	3.57[b]	3.54[b]
Study 2	4.93[a]	4.64[a]	4.25[b]	4.06[b]
Study 3	4.92[a]	4.64[a,b]	4.25[a,b]	4.06[b]
Study 4	4.50[a]	4.27[a]	3.51[b]	3.45[b]
Vitality				
Study 1	4.76[a]	4.35[a,b]	4.06[b,c]	3.67[c]
Study 2	4.77[a]	4.46[a,b]	3.75[c]	4.05[b,c]
Study 3	4.89[a]	4.33[a,b]	4.71[a,b]	4.17[b]
Study 4	4.39[a]	4.07[a,b]	4.12[a,b]	3.66[b]
Life satisfaction				
Study 1	4.85[a]	4.60[a]	4.70[a]	3.98[b]
Study 2	4.87[a]	4.80[a,b]	4.07[b]	4.31[b]
Study 3	5.29[a]	4.64[a]	5.22[a]	4.50[a]
Study 4	4.80	4.37	4.80	4.61

Eud. Eudaimonia, *Hed.* Hedonia

Within each row, different superscripts indicate significantly different means at $p < .05$ with Scheffé post hoc tests; when superscripts are not given, univariate F test was non-significant, so that examination of post hoc results was inappropriate

life satisfaction. Thus, the full life did have certain advantages over a life focused only on hedonia or only on eudaimonia.

2.3 Correlations of the HEMA with the Orientations to Happiness Scale

Before proceeding to Study 2, we performed some further tests of the construct validity of the HEMA, our measure of eudaimonia and hedonia. In a separate sample of 80 undergraduates (69% female, mean age 19.3 with SD = 1.3), we assessed the HEMA as well as the eudaimonia and hedonia subscales of the Orientations to Happiness scale by Peterson et al. (2005). Results showed strong correlations between measures assessing the same construct, and no correlations between measures assessing different constructs: Orientations to Happiness eudaimonia correlated $r = .61$ ($p < .01$) with HEMA eudaimonia but $r = .01$ (ns) with HEMA hedonia; and Orientations to Happiness hedonia correlated $r = .63$ ($p < .01$) with HEMA hedonia but $r = .04$ (ns) with HEMA eudaimonia. This pattern provided convergent and discriminant validation of the HEMA scales.

3 Study 2

Study 2 was a replication of Study 1, but with briefer versions of some of the well-being scales, to set the stage for Study 3 (an experience-sampling study) and Study 4 (an intervention study with nightly reports), where briefer measures would be needed.

3.1 Method

3.1.1 Participants

Participants were 321 undergraduates. They were 61% female; mean age was 19.7 (SD = 2.5); 63% were White, 14% Asian, 8% Hispanic, 6% Black, 4% East Indian/Pakistani, 1% Middle Eastern, 1% native American, and 2% of mixed ethnic origin; and 25% were psychology majors. Analyses showed that females were lower in carefreeness ($t = 3.27$, $p < .01$) than males; psychology majors were less carefree than other majors ($t = 1.99$, $p < .05$); and Whites had higher life satisfaction ($t = 2.45$, $p < .05$) and lower negative affect ($t = 2.38$, $p < .05$) than non-Whites. None of the four demographic variables showed relationships with eudaimonia or hedonia.

3.1.2 Procedure

Participants completed the study for course credit on the same research website and using the same procedure as in Study 1.

3.1.2.1 Hedonic and Eudaimonic Motives for Activities The HEMA was the same as in Study 1. PCA with Direct Oblimin rotation (Delta = 0) again clearly indicated a two-factor solution and the eudaimonic and hedonic items again separated cleanly; alphas were .86 for eudaimonia and .81 for hedonia.

3.1.2.2 Well-Being As in Study 1, participants rated how they typically felt. Positive affect, negative affect, life satisfaction, and vitality were assessed with the same scales as

in Study 1. The remaining well-being variables were assessed using subsets of items from Study 1. Meaning was assessed using two items, "meaningful" and "valuable," with alpha .83. Elevating experience was assessed using eight items, "in awe," "deeply appreciating," "emotionally moved," "morally elevated," "inspired," "enriched," "connected with a greater whole" and "part of something greater than myself," with alpha .87. Carefreeness was assessed using three items, "carefree," "free of concerns," and "detached from my troubles," with alpha .69. A PCA with Varimax rotation of all 33 well-being items showed that seven factors had eigenvalues above 1, but the seventh factor had only two weakly loading items. We therefore extracted six factors. Following Varimax rotation, we found that the items separated cleanly with very few cross-loadings into the following groups: elevating experience and meaning; vitality; life satisfaction; negative affect; positive affect; and carefreeness. Thus, only elevating experience and meaning were not separate. In a PCA with just the 13 newer well-being items, however, three factors had eigenvalues above 1 and the items cleanly separated into three groups: elevating experience, carefreeness, and meaning. Thus, we again found reasonable evidence for the distinctness and inner coherence of the newer well-being measures.

3.2 Results and Brief Discussion

3.2.1 Relationships of Eudaimonia and Hedonia with Distinct Sets of Well-Being Variables

In Table 1, the results for Study 2 can be found in the first column, in the second row of each cell. As in Study 1, hedonia related more to carefreeness, but not more to negative affect; unlike Study 1, hedonia did not relate more to positive affect. As in Study 1, eudaimonia related more to both meaning and elevating experience. Unlike Study 1, where vitality and life satisfaction related about equally to both pursuits, they related more to eudaimonia in this study.

3.2.2 Testing the Full Life Hypothesis

We also performed a MANOVA comparing individuals with a full life ($N = 109$), predominantly eudaimonic life ($N = 54$), predominantly hedonic life ($N = 55$), and empty life ($N = 69$) in the same was as in Study 1. The overall model was highly significant (for Wilks' Lambda, $F = 6.84$, $p = .000$). The results appear in the second row of each cell in Table 3. The findings were very consistent with Study 1, except that here the full life did not differ from the empty life in carefreeness, and the full life was higher than the hedonic life in life satisfaction.

4 Study 3

In Study 3 we employed experience-sampling (Brown and Ryan 2007), assessing peoples' well-being and eudaimonic/hedonic motives for their activities seven times a day for seven consecutive days. This strategy allowed us to determine both between-person and within-person relationships of eudaimonia and hedonia with well-being. Specifically, at the between-person level, we could determine whether people who generally engaged in a lot of eudaimonic/hedonic activity also generally experienced high levels of certain form of

well-being. Analyses at the within-person level would address a different question: whether eudaimonic/hedonic motivation for an activity at a single moment in time was simultaneously accompanied by a certain form of well-being at that moment.

4.1 Method

4.1.1 Participants

Participants were 102 undergraduates. They were 74% female; mean age was 20.0 (SD = 2.6); 65% were White, 16% Asian, 7% Black, 6% Hispanic, 3% Middle Eastern, 2% East Indian, and 3% of mixed ethnic origin; and 54% were psychology majors. Females were lower in carefreeness ($t = 2.48$, $p < .05$), higher in life satisfaction ($t = 2.30$, $p < .05$), and higher in meaning ($t = 3.33$, $p < .01$) than males; psychology majors scored higher on hedonia than other majors ($t = 2.08$, $p < .05$); and Whites had higher life satisfaction ($t = 2.97$, $p < .01$) than non-Whites.

4.1.2 Procedure

During an initial session, participants completed a paper-and-pencil questionnaire assessing their typical well-being, and received instruction on how to complete the experience-sampling portion of the study. During experience-sampling, participants carried pagers that were activated at seven random times each day between 10:00 a.m. and 11:00 p.m., for seven consecutive days, and directed them to complete pencil-and-paper forms that were all contained in a booklet identified by the participant's ID number. Different participants began on different week days to minimize the impact of weekly cycles in activities and mood (Moskowitz et al. 1997). The delay between pager activation and completion of an experience-sampling form had a median of 4 min and a mean of 23 min. Participants completed on average 44.65 (SD = 4.09) of the 49 forms. They completed four versions of the experience-sampling form at different times of day, as detailed below, to reduce the effects of response set and to keep the length of the experience-sampling form comparable to that used by other researchers (Brown and Ryan 2007; Csikszentmihalyi and Rathunde 1993). Participants received course credit for completing the study.

4.1.3 Initial Session Measures

4.1.3.1 Typical Well-Being Measures To assess typical well-being at the between-person level, we administered the same measures as in Study 2.

4.1.4 Experience-Sampling Measures

4.1.4.1 Hedonic and Eudaimonic Motives for Activities Each experience-sampling form first inquired "What was the MAIN thing you were doing as you were paged?" and "What other things were you doing or thinking about?" Participants gave one-line written responses to each question. Participants were then asked about their eudaimonic and hedonic motives as follows: "To what degree did you approach this activity (or these activities) with each of the following intentions, whether or not you actually achieved your aim?" They gave ratings on the nine HEMA items used in Studies 1 and 2.

An exploratory PCA was conducted between persons on the HEMA items, using each item's mean score across experience-sampling forms. The eigenvalues clearly indicated a two-factor solution, and after oblique rotation (with Direct Oblimin, Delta = 0), the items separated cleanly as expected. To obtain between-person estimates of peoples' eudaimonic and hedonic motives, we computed the means of relevant item means; alphas of the two scales were .95 and .96, respectively.

Note that it is these means which we correlated with assessments of typical well-being obtained from the initial session. We assessed typical eudaimonia and hedonia in this way because it was less influenced by retrospective biases; we assessed typical well-being using the measures from the initial session, rather than means across experience-sampling forms, because this was the only time we assessed life satisfaction (we did not consider it meaningful to obtain such a global assessment on the short time scale of the experience-sampling), and because we wished to make the assessment of well-being as independent as possible from the assessment of eudaimonia/hedonia—it came before the eudaimonia/hedonia assessment, and it was not tied to the specific time points that were experience-sampled.

We also conducted an exploratory PCA within persons, to determine how the HEMA behaved at that level. This PCA was performed on deviation scores from each person's mean, permitting the study of within-person relations only, without contamination by between-person relations (Thompson and Bolger 1999). Again, there was a clear two-factor solution, and after oblique rotation (Direct Oblimin, Delta = 0), the items separated cleanly as expected. Within-person alphas, again based on deviation scores (Thompson and Bolger 1999), were .87 for eudaimonia and .94 for hedonia.

The between-persons correlation between hedonia and eudaimonia was .46 ($p < .01$), indicating that people who are highly eudaimonic also tend to be highly hedonic, much as we found in Studies 1 and 2. Interestingly, the within-person correlation was −.28 ($p < .01$), indicating that eudaimonia and hedonia are somewhat opposing motives at a given moment in time.

The within-person correlation between eudaimonia and hedonia, and all subsequent within-person correlations, were obtained using hierarchical linear modeling, with the HLM6 program by Raudenbush et al. (2004). We standardized the within-person regression coefficient when one variable was treated as the independent variable (and group centered), and the other was treated as the dependent variable. That is, the regression coefficient was multiplied by the within-person standard deviation of the independent variable, then divided by the within-person standard deviation of the dependent variable—this produced an estimate of the zero-order correlation.

4.1.4.2 Positive Affect and Negative Affect For these and all other well-being outcomes, participants rated how they felt at the time they were paged. Positive affect and negative affect were assessed with the same items as in the initial session, except that different subsets of items appeared on each of four versions of the experience-sampling form, to keep the measure brief. For positive affect, the subsets were "joyful" and "happy" or "enjoyment/fun" and "pleased"; for negative affect, the subsets were "angry/hostile," "depressed," and "frustrated" or "angry/hostile," "unhappy," and "worried/anxious." Creation of these subsets was based on a preliminary experience-sampling study ($N = 100$), such that their between-persons correlation was maximized. In the present study, the positive affect and negative affect subsets had between-person correlations of .84 and .90, respectively.

4.1.4.3 Vitality Within-person vitality (e.g., "at this time I have energy and spirit") was based on the state vitality scale by Ryan and Frederick (1997), whose wording closely parallels their trait vitality scale. We employed the four items that had loaded highest in PCA of the vitality scale in the preliminary experience-sampling study, separated into the following two subsets: "I feel energized right now" and "at this time, I have energy and spirit," or "at this moment, I feel alive and vital" and "at this moment, I feel alert and awake." The between-person correlation of these subsets was .85.

4.1.4.4 Elevating Experience, Meaning, and Carefreeness Elevating experience was assessed on every other experience-sampling form by the items "in awe," "deeply appreciating," "morally elevated," "inspired," and "part of something greater than myself." Meaning was represented by "meaning" and "value" on all experience-sampling forms. Carefreeness was represented by "carefree" and "free of concerns" on all forms.

4.2 Results and Brief Discussion

4.2.1 Relationships of Eudaimonia and Hedonia with Distinct Sets of Well-Being Variables

In Table 1, the between-person results for Study 3 can be found in the first column, in the third row of each cell. A person's typical degree of hedonia related more to their typical carefreeness than did typical eudaimonia; however, hedonia did not relate more to positive affect or negative affect. A person's typical degree of eudaimonia related more to elevating experience, but not more to meaning in this study. Vitality related to both eudaimonia and hedonia, to about equal degrees; however, life satisfaction related only to hedonia in this study.

The within-person correlations appear in the second column of Table 1, on the rows corresponding to Study 3. The predictions for hedonia were all supported at this level—at a given moment, hedonically motivated activity was accompanied by greater carefreeness, greater positive affect, and lower negative affect than was eudaimonically motivated activity. In fact, eudaimonic activity was on average not accompanied by these feelings. On the other hand, eudaimonic activity at a given moment was strongly accompanied by a sense of meaning, while hedonia was unrelated to meaning. Unexpectedly, eudaimonic activity was not on average accompanied by elevating experience. As predicted, both types of activity were accompanied by vitality, and to equal degrees.

4.2.2 Testing the Full Life Hypothesis

Finally, we performed a MANOVA comparing individuals with a full life ($N = 31$), predominantly eudaimonic life ($N = 21$), predominantly hedonic life ($N = 18$), and empty life ($N = 30$) in the same way as in Studies 1 and 2. The overall model was highly significant (for Wilks' Lambda, $F = 1.99, p = .007$). The results appear in the third row of each cell in Table 2. There were fewer differences observed than in Studies 1 and 2, probably because the group sizes were much smaller. Here, the full life was significantly higher than the empty life only in elevating experience and vitality, and the full life did not differ from either the eudaimonic life or the hedonic life on any well-being variable. Nevertheless, none of the effects were in directions contrary to our predictions, and many effects were of large enough magnitudes that they may have reached significance with larger group sizes.

5 Study 4

Whereas Studies 1–3 were correlational, our final study was an experimental manipulation, to confirm the causal relations predicted in our hypotheses. Study 4 consisted of an intervention where participants were randomly assigned to add hedonic or eudaimonic activities to their lives for 10 days. We then compared their well-being before the intervention with their well-being in the latter 7 days of the intervention, as well as 3 months after the intervention. This allowed us to examine both the short-term and longer-term impacts of adding a daily dose of eudaimonia and hedonia.

5.1 Method

5.1.1 Participants

Participants were 114 undergraduates. We randomized 54 to the eudaimonia condition and 59 to the hedonia condition. Participants were 73% female; mean age was 19.8 years (SD = 2.9); 74% were White, with 13% Asian, 4% Black, 4% Middle-eastern, 3% East Indian, and 3% of mixed ethnic origin; and 41% were psychology majors. One person in each condition failed to complete the diary part of the study. The two conditions did not differ significantly on any of the four demographic variables. When collapsing across the two conditions, males were higher in carefreeness than females ($t = 4.30$, $p < .01$).

5.1.2 Procedure

In an initial session, participants completed a paper-and-pencil baseline assessment of their well-being, hedonia, and eudaimonia. For the next 10 days, participants engaged in the intervention. They were asked to add at least one hedonic or eudaimonic activity (depending on the condition) to each intervention day, beyond what they would normally do. Participants themselves were asked to decide which activities to add. Based on findings cited in Sheldon and Lyubomirsky (2007), where participants derived greater well-being when asked to vary their added activities, we asked participants to engage in at least three different activities over the 10-day intervention; an examination of the activities participants reported indicated that they all complied. To clarify what kinds of activities qualified as hedonic/eudaimonic, we gave participants our definitions and many examples. Participants were told that, in determining compensation for the study, we estimated that they would spend 25 min per added activity, but that they were free to spend as much or as little time as they wished. The median length of time that participants spent on each added activity was 90 min. There was no difference between conditions on time spent.

At bedtime on each intervention day, participants completed a web-based survey on the activity(ies) they added that day and the well-being states that resulted from them. The survey was on the research website used in Studies 1 and 2, and participants identified themselves with a participant ID number and a password that had been assigned to them. The most commonly reported activities in the hedonia condition were: sleeping more, socializing, listening to music, watching TV or a movie, shopping, playing games, self-pampering (e.g., hair, nails), eating sweets, taking time to enjoy scenery, reading, and doing various things in a more leisurely fashion. The most commonly reported activities in the eudaimonia condition were: helping someone or cheering them up, studying extra hard,

being extra kind, finishing an assignment early, doing health-promoting activities like eating better or exercising, striving to have a meaningful discussion with someone, forgiving someone, connecting with one's spirituality, taking time to introspect or think about one's values or count one's blessings, and organizing one's things or cleaning one's room. Participants were also asked to write down at least one idea for something they might add to the following day, to keep them mentally engaged in the intervention. The mean number of bedtime diaries completed was 9.24 (SD = 1.47) out of 10.

The day after the 10-day intervention, participants completed a web-based *immediate follow-up* questionnaire on their typical well-being and typical eudaimonia and hedonia the previous week, i.e., the latter 7 days of the intervention. Participants received course credit for completing the study to this point. In addition, 3 months after the intervention, participants could complete a web-based *3-month follow-up* questionnaire on their typical well-being and typical hedonia and eudaimonia the previous month, to be entered in a lottery for two prizes of $50 each. In the eudaimonia condition, 33 of the 54 participants completed the 3-month follow-up; in the hedonia condition, 38 of the 59 participants completed it; those who did not complete the 3-month follow-up did not differ from those who did complete it on any initial session variable, either when analyzing the two conditions separately or in combination.

5.1.3 Initial Session Measures

5.1.3.1 Previous Month's Eudaimonia, Hedonia, Positive Affect, Negative Affect, Life Satisfaction, Vitality, Meaning, Carefreeness, and Elevating Experience These were assessed with the same items as in Studies 2 and 3. The only difference was that participants reported their feelings and their motives for activities during the past month rather than their typical feelings and motives. These assessments provided data for between-person analyses to replicate Studies 1–3, and also served as baseline measures for studying the effects of the eudaimonic and hedonic interventions.

5.1.4 Bedtime Measures

5.1.4.1 Added Activity Description Participants gave a brief written description of the activity(ies) they added to their day. They also wrote how much extra time beyond their usual routine they spent on the activity(ies).

5.1.4.2 Hedonic and Eudaimonic Motives for Activities The HEMA was the same as in Studies 1–3, except that participants reported on their motives for their additional activity(ies) that day, rather than their motives for their activities typically or when they were paged.

When averaging across all the bedtime diaries as a manipulation check, the mean eudaimonia score was significantly higher in the eudaimonia condition ($t = 6.89, p < .01$), while the mean hedonia score was significantly higher in the hedonia condition ($t = 10.29$, $p < .01$). Thus, participants chose pursuits that fit with the intervention instructions.

5.1.4.3 Well-Being Derived from Added Activity(ies): Positive Affect, Negative Affect, Vitality, Meaning, Elevating Experience, and Carefreeness Participants rated the degree to which their day's additional activity(ies) made them feel each form of well-being, using the same items as between persons.

5.1.5 Follow-up Measures Immediately After and 3 Months After the Intervention

5.1.5.1 Eudaimonia, Hedonia, Positive Affect, Negative Affect, Vitality, Meaning, Elevating Experience, Carefreeness, and Life Satisfaction These were assessed with the same measures as at baseline, this time inquiring about the previous week at immediate follow-up, or the previous month at 3-month follow-up.

5.2 Results and Brief Discussion

5.2.1 Relationships of Eudaimonia and Hedonia with Distinct Sets of Well-Being Variables

The reports of eudaimonia, hedonia, and well-being over the previous month were between-person assessments, and thus provided a fourth replication of the between-person correlations of Studies 1–3. We collapsed across the two intervention conditions to perform the analyses. The results appear in the first column of Table 2, in the bottom of each cell.

In addition, the bedtime reports regarding the eudaimonia and hedonia of one's added activity, and the well-being derived from that activity, were within-person assessments (i.e., they assessed states that could vary from day to day within a given person). They therefore provided a second replication of the within-person correlations of Study 3. We collapsed across the two intervention conditions to perform the analyses. The results appear in the second column of Table 2, in the bottom of each cell.

If we summarize the correlations across the four studies, we can draw several conclusions. We found strong support for our predictions regarding carefreeness and vitality, both between and within persons. Hedonia was the pursuit more linked with feeling carefree, and eudaimonia showed little relation with this form of well-being. Both hedonia and eudaimonia were positively related to vitality, and to about equal degrees.

We also found fair support for several other predictions. Hedonia related consistently more to positive affect than did eudaimonia within persons, and in two of four studies between persons (note that eudaimonia showed no relation to positive affect within persons, but did show consistent links between persons). Eudaimonia related consistently more to meaning within persons and in two of four studies between persons (note that hedonia showed no relation to meaning within persons, but fairly consistent links between persons).

Somewhat weaker support was found for our prediction that life satisfaction would relate positively and equally to both pursuits. It related to eudaimonia in two of the four studies and to hedonia in two of the four studies, and did not relate to one pursuit more than the other, with the exception of one study.

Several findings showed some differences from our predictions. Compared to hedonia, eudaimonia related consistently more to elevating experience between persons, but not within persons; eudaimonia did, however, relate to elevating experience within persons in one of two studies. Compared to eudaimonia, hedonia was more negatively related to negative affect within persons, but not between persons; hedonia did, however, relate negatively to negative affect between persons in two of four studies.

5.2.2 Testing the Full Life Hypothesis

Furthermore, we used our between-person assessments of hedonia and eudaimonia, collapsed across conditions, to test the full life hypothesis, just as we had in Studies 1–3. Thus,

we compared people with the full life ($N = 36$), eudaimonic life ($N = 20$), hedonic life ($N = 27$), and empty life ($N = 29$). The overall model was highly significant (for Wilks' Lambda, $F = 3.39$, $p = .000$). The results appear in the bottom row of each cell in Table 2.

If we summarize the findings across Studies 1–4, when comparing the full life and the empty life, all four studies show that the full life is associated with greater elevating experience and vitality; three of four studies show that it is associated with greater positive affect and meaning; and two of four studies showed that it is associated with greater life satisfaction—Studies 1 and 2, where group sizes were two to three times as great as those in Studies 3 and 4, and thus power was higher. Across all four studies, there was no difference between the full life and empty life in terms of negative affect. Carefreeness also played little role in differentiating between the full life and empty life—only one of four studies showed a difference.

When comparing the full life with the eudaimonic life or the hedonic life, we found the following. Two of four studies (Studies 1 and 2) show that adding hedonia to a life already high in eudaimonia was linked with increased positive affect and carefreeness, though hedonia did not contribute additional vitality or life satisfaction, nor did it reduce negative affect. Three of four studies showed that adding eudaimonia to a life already high in hedonia was linked with greater elevating experience, and two studies (Studies 1 and 2) showed increased meaning and vitality, though eudaimonia did not show much evidence of contributing additional life satisfaction. Moreover, people with the full life were never significantly lower on any well-being variable than the other three groups of individuals. These results clearly supported the prediction that people high in both eudaimonia and hedonia would have greater well-being than others, and the analyses reveal the specific forms of well-being where the differences occur.

5.2.3 Changes in Well-Being Over Time

The remaining analyses of Study 4 focused on the causal effects of eudaimonia versus hedonia. Table 4 shows the results for paired-samples *t*-tests, within each intervention condition, when comparing baseline with each of the follow-ups.

Table 4 Paired-samples *t*-tests indicating effects of eudaimonic and hedonic interventions on well-being

	Immediate follow-up minus baseline		3-month follow-up minus baseline	
	Eudaimonia condition	Hedonia condition	Eudaimonia condition	Hedonia condition
Positive affect	−.31	2.97**	2.58*	.85
Negative affect	−7.57**	−6.15**	−5.84**	−3.60**
Carefreeness	.61	4.42**	4.20**	4.61**
Meaning	2.92**	.76	.51	−1.08
Elevating experience	−1.45	−1.41	2.09*	.32
Vitality	.45	2.71**	3.17**	2.58*
Life satisfaction	1.36	3.11**	1.75	.67
Eudaimonia	2.27*	−4.74**	.58	−1.71
Hedonia	−2.31*	5.44**	1.89	1.63

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

As predicted, individuals in the hedonia condition had increased positive affect, carefreeness, vitality, and life satisfaction, and decreased negative affect, at immediate follow-up. The rises in positive affect and carefreeness were significantly greater than in the eudaimonia condition, providing the strongest form of evidence that the intervention conditions differed in these outcomes (this was indicated by independent-samples *t*-tests comparing the eudaimonic versus hedonic conditions in terms of change scores, i.e., follow-up minus baseline; the values were $t = 2.14$, $p < .05$, and $t = 2.65$, $p < .01$, respectively). The effects on carefreeness, vitality, and negative affect were still in evidence at 3-month follow-up. Overall, we found good support for our predictions regarding hedonia, though some of the benefits faded over time.

Our hypotheses regarding the effects of eudaimonia were partly supported. Only eudaimonia, but not hedonia, produced any changes in meaning (at immediate follow-up) or elevating experience (at 3-month follow-up). Eudaimonia also produced a rise in vitality by 3-month follow-up, though it did not produce any increases in life satisfaction. Surprisingly, eudaimonia also decreased negative affect at both immediate and 3-month follow-up.

The other unexpected findings were the increases in positive affect and carefreeness by 3-month follow-up in the eudaimonia condition. This seemed to parallel our finding that eudaimonia related to positive affect between persons but not within persons, and suggested that eudaimonia may have some delayed or cumulative benefits.

5.2.4 Changes in Eudaimonia and Hedonia Over Time

It is also informative to examine how eudaimonia and hedonia themselves changed over time, as shown in Table 4. At both immediate and 3-month follow-up, this reveals whether participants generally became more eudaimonic or hedonic, depending on their condition—that is, whether the intervention spilled over into their lives as a whole. At 3-month follow-up, it can also help us determine whether well-being changes to that time point may be explained by continuing engagement in eudaimonia or hedonia, even though participants were no longer being asked to engage in these pursuits.

At immediate follow-up, where participants reported on the last 7 days of the intervention, people in the eudaimonia condition reported a general increase in eudaimonic motivation, and people in the hedonia condition reported a general increase in hedonic motivation. This suggests that participants did not simply add one isolated eudaimonic or hedonic activity to their day, but rather that they engaged in the intervention to a degree that produced an overall increase in their eudaimonic or hedonic motivation. It is noteworthy that people in the eudaimonia condition actually reported a decrease in hedonia, and vice versa for people in the hedonia condition. This occurred despite the fact that participants in each condition were not aware that the study had other conditions. It indicates that eudaimonia and hedonia really are somewhat different modes of functioning, and that increased focus on one pursuit leads people to pay less attention to the other, at least over a time span of several days.

By 3-month follow-up, any changes from baseline in eudaimonia or hedonia had faded, on average. However, based on Seligman et al. (2005), who found that the degree to which people continued their positive psychology intervention predicted their degree of happiness, we expected that some individuals may have continued the intervention, and that the degree to which they continued it would relate to their well-being benefits. Thus, we tested whether change scores (3-month follow-up minus baseline) in eudaimonia and hedonia were correlated with change scores in each well-being variable. The results appear in Table 5.

Table 5 Correlations between well-being changes and eudaimonia or hedonia changes from baseline to 3-month follow-up

	Eudaimonia change in eudaimonia condition	Hedonia change in hedonia condition
Positive affect change	.28	.52**
Negative affect change	−.08	−.50**
Carefreeness change	−.43*	.29
Meaning change	.59**	.30
Elevating experience change	.45**	.30
Vitality change	.20	.23
Life satisfaction change	−.08	.40*

For each variable, change from baseline to 3-month follow-up was operationalized as 3-month follow-up score minus baseline score

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

In the eudaimonia condition, 46% of participants had positive change scores on eudaimonia (10% did not change), and the degree to which they were more eudaimonic than at baseline related to their degree of increase in meaning and elevating experience, though not to an increase in vitality or life satisfaction (and there was actually a negative relationship with change in carefreeness). In the hedonia condition, 61% had positive change scores on hedonia (11% did not change), and the degree to which people were more hedonic than at baseline related to their degree of increase in positive affect and life satisfaction, and decrease in negative affect, though not to changes in carefreeness or vitality. Thus, there were some individuals who did persist with greater eudaimonia or hedonia, and those individuals experienced rises in certain forms of well-being.

6 General Discussion

6.1 Relationships of Eudaimonia and Hedonia with Distinct Sets of Well-Being Variables

Across four studies, we contrasted eudaimonic and hedonic pursuits, and found that they related to some distinct and some overlapping sets of well-being outcomes. In what follows, we summarize the findings for each well-being variable in turn.

Hedonia related to *positive affect* in most analyses, and this link was often stronger than eudaimonia's link with positive affect. However, hedonia showed this advantage more consistently and strongly within persons than between persons, and in the intervention study its effects on positive affect faded by 3-month follow-up. These findings supported our view that a key function of hedonia is self-regulation of emotion, but suggested that the effect is strongest at the immediate or short-term time scale. That is, hedonically motivated activity feels very good while it is being carried out, but it may not support processes that continue to produce positive affect in the long run, or that would raise a person's overall baseline well-being. Interestingly, eudaimonia showed the opposite pattern. It was unrelated to positive affect within persons and at immediate follow-up, but it did relate to positive affect between persons and at 3-month follow-up. Thus, eudaimonically motivated activity is not particularly pleasant (or unpleasant) while it is carried out, but may have some delayed or cumulative effects on positive affect. Perhaps eudaimonia brings positive affect when it finally produces results, such as successful performance or arrival at a goal;

or, perhaps repeated eudaimonic activity gradually builds resources that raise baseline positive affect, such as increased skills at various tasks.

Hedonia related negatively to *negative affect* in most analyses, though it only showed a consistent advantage over eudaimonia within persons, and its strongest effect in the intervention study was at immediate follow-up. As with positive affect, this supported our view that hedonic activity helps people to regulate affect, and suggested that its influence is strongest in the short term. Though eudaimonia showed few links with negative affect, it did reduce negative affect at both immediate and 3-month follow-up in the intervention study. We would like to see if this effect is replicated, but if it should prove robust, it would indicate that eudaimonia has the additional effect of reducing distress. Perhaps eudaimonia provides goals that draw attention away from absorption in negative emotions, or perhaps it builds coping skills that immunize people against negative affect.

In most analyses, hedonia related more strongly to *carefreeness* than did eudaimonia. This clearly supported our prediction that hedonically motivated activity functions to release people from their concerns and worries. It would seem that any discussion of the benefits of hedonia would be incomplete without reference to carefreeness.

We found that *meaning* related to eudaimonia in most between- and within-person correlations, and was often less related to hedonia. In the intervention study, though the average effect of eudaimonia on meaning was non-significant at 3-month follow-up, the degree to which participants maintained higher eudaimonia strongly related to their increase in meaning. Overall, therefore, our results supported the argument of several authors that eudaimonia and meaning are intimately linked (e.g., Ryan and Deci 2001; Ryff and Singer 1998; Seligman 2002). The results suggest that eudaimonia not only arises from one's values and meaning framework (as reflected in our operationalization of eudaimonic motives), but also reinforces one's connections with these, by generating a sense that one's actions and experiences have personal significance, are valuable, and are important in some broader context.

Eudaimonia was generally related to *elevating experience*, and this relation was stronger than hedonia's relation with elevating experience, at least at the between-person level. In addition, the intervention study showed that eudaimonia increased elevating experience by 3-month follow-up, though not by immediate follow-up. These findings support our prediction that eudaimonia would be associated with inspiration, deep appreciation, and self-transcendence. Further, they suggest that eudaimonia may increase a person's baseline capacity for these experiences over time. Perhaps repeated eudaimonic activity gradually builds psychological foundations that foster elevating experience, such as greater insight or greater appreciation of how one connects to a broad context.

In most analyses, both eudaimonia and hedonia were associated with *vitality*, and to about equal degrees. Thus, both pursuits may foster a heightened sense of aliveness. In future research, it will be important to test pathways for these links with vitality—for example, whether hedonic activities provide new psychological energy through physical repose, whereas eudaimonia activates energy that a person already has, perhaps by satisfying psychological needs for competence (see Ryan and Deci 2008).

Finally, there was fair evidence that *life satisfaction* related to both hedonia and eudaimonia, though it was more tied to hedonia in the intervention study. Overall, our findings did not help us to conclusively determine whether life satisfaction is a non-specific well-being outcome, or whether it is specifically a hedonic variable, as some authors have suggested (Compton et al. 1996; Keyes et al. 2002).

If we review the findings summarized above, we find that eudaimonia and hedonia relate to somewhat different flavors of well-being, so to speak, that seem to fill complementary roles in life. Hedonia relates more to purely affective outcomes, while eudaimonia relates more to cognitive-affective feelings of significance and appreciation; hedonia relates to becoming disengaged from concerns, while eudaimonia relates to becoming more engaged and feeling connected with a broader whole; and hedonia relates more to immediate outcomes, while eudaimonia relates somewhat more to longer-term and person-level outcomes, suggesting that these pursuits may fulfill well-being at different time scales.

6.2 Testing the Full Life Hypothesis

Given that we expected both eudaimonia and hedonia to contribute to well-being in life, and that we did not see them as mutually exclusive, we expected their combination to be linked with particularly great well-being. We found good support for this prediction. People who pursued both eudaimonia and hedonia reported higher levels of most well-being variables than people with neither pursuit (though they usually did not differ in negative affect or carefreeness). Furthermore, hedonia and eudaimonia each made unique contributions to well-being. Adding hedonia to a life already high in eudaimonia was linked with greater positive affect and carefreeness; adding eudaimonia to a life already high in hedonia was linked with greater meaning, elevating experience, and vitality. Like the findings of Peterson et al. (2005), which showed that a combination of eudaimonia and hedonia related to the greatest life satisfaction, our results contribute to the evidence that people do not need to make a choice between hedonia and eudaimonia. Embracing both pursuits is associated with the greatest and most diverse well-being.

6.3 Additional Implications

The varied benefits of eudaimonic and hedonic activities highlight the importance of measuring well-being more broadly than it often is. We extended beyond the concepts most often measured (i.e., positive affect, negative affect, and life satisfaction) by adding vitality, meaning, carefreeness, and elevating experience. Had we only included the most commonly assessed concepts, we would have obtained a skewed picture—for example, we would have concluded that eudaimonia had few immediate benefits, and we would have missed the strong link between hedonia and freedom from concerns. We think that meaning and elevating experience are especially important for a comprehensive assessment of well-being, and should be included more routinely in the well-being literature. As Frankl (1963) so eloquently pointed out, a life can be made worthwhile through finding meaning, even in the context of immense suffering—well-being is about more than feeling good. And an assessment of well-being is incomplete without attention to the higher states that a human being can achieve—this is where we find our greatest inspiration and our greatest motivation for making the world a better place (Haidt 2000).

Further, an important impetus for our studies was the need to distinguish between eudaimonia/hedonia as pursuits and potential well-being outcomes. Past work has often blurred this distinction, making it difficult to determine how the pursuits a person adopts will then affect well-being. By defining both eudaimonia and hedonia as motives, we have been able to investigate this question more directly.

Finally, it is worth noting that some of our findings were not necessarily obvious. Schooler et al. (2003) have shown that the conscious pursuit of enjoyment can sometimes

undermine the very enjoyment that people seek. Thus, determining the average link between the *pursuit* of enjoyment and the *experience* of enjoyment was an important empirical question. The differences we observed when comparing the between-person and within-person levels, and when comparing immediate follow-up versus 3-month follow-up, were also instructive, particularly regarding positive affect-hedonia's effect faded over time, while eudaimonia's effect increased. Also, our results show that vitality, which has often been linked with eudaimonia (e.g., Ryan and Deci 2001; Kashdan et al. 2008), and subjective well-being, which has often been called a hedonic form of well-being (e.g., Kahneman et al. 1999; Urry et al. 2004) are not exclusively linked with either category. Our results consistently showed that vitality related equally to both eudaimonia and hedonia, and the components of subjective well-being related not only to hedonia, but also to eudaimonia in some analyses. Our paper fills a crucial gap in the literature because it determines how eudaimonia and hedonia relate to different forms of well-being empirically, rather than applying the terms "eudaimonic well-being" and "hedonic well-being" to outcomes a priori.

6.4 Future Directions

One potential limitation of our studies is that they were based on self-report measures. While we see the self-report approach as appropriate for assessing private motives and subjective experiences (Kashdan et al. 2008; Sheldon and Lyubomirsky 2007), we also recognize that it is susceptible to retrospective biases, self-presentation biases, and lack of insight. We partly addressed these concerns in the two studies that employed experience-sampling, which reduced retrospective bias. Nevertheless, strategies such as peer ratings or behavioral measures would provide further evidence that bypasses some of the limitations of self-report measures. Our participants were also undergraduates, representing restricted age and education ranges, and most participants were female and White. In future work, it will be important to study different populations, to determine the generality of our findings. It would be valuable to include a control condition in future intervention studies, to control for changes over time that all participants may experience. Some of our data were collected on-line, which can be a potential limitation insofar as conditions of administration vary for on-line participants. Finally since this is a first approach to allowing people to rate the hedonic and eudaimonic nature of their activities, our measurement tools can be further validated and refined.

The question we have investigated is central to human life: What can a person do find well-being? Our paper suggests that both hedonic and eudaimonic pursuits are important, and that they may fill somewhat different niches in a well-rounded picture of well-being. Yet this is only an initial step in mapping out a vast territory. For example, we would like to determine the impacts of eudaimonia and hedonia beyond personal well-being, including their impacts on close others, the broader community, and the ecosystem. It would be informative to study the interplay between eudaimonia and hedonia, e.g., to see whether hedonia becomes more satisfying after a prolonged period of eudaimonia, and vice versa. The possibility of a reverse causal arrow, *from* well-being *to* eudaimonia or hedonia, should also be investigated—Fredrickson's (2001) broaden-and-build theory suggests that positive emotions may encourage the kind of broadened awareness and growth that characterizes eudaimonia. Another future question would be to examine the relative autonomy of both hedonic and eudaimonic motives, as activities in both categories can be either autonomous or controlled (Ryan et al. 2008). More generally it will be interesting to examine why people choose hedonic and/or eudaimonic pathways in the first place—influences on peoples' life trajectories probably begin early, with parenting styles and

childhood experiences, and these may shape the well-being strategies that people pursue throughout their lives.

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