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THE IMPLICATIONS OF TWO CONCEPTIONS OF HAPPINESS (HEDONIC ENJOYMENT AND EUDAIMONIA) FOR THE UNDERSTANDING OF INTRINSIC MOTIVATION

ABSTRACT. The distinction between hedonic enjoyment and eudaimonia was evaluated in three data sets involving use of the Personally Expressive Activities Questionnaire—Standard Form (PEAQ-S) with college student samples ($n > 200$ in each sample). Indices of these two conceptions of happiness were strongly and reliably related across the three samples. Differences between these two conceptions of happiness were evaluated in two ways. First, we examined and compared correlations of hedonic enjoyment and eudaimonia with variables related to intrinsic motivation. Zero-order correlations involving hedonic enjoyment were significantly stronger with respect to measures of self-determination and interest than were the corresponding correlations involving feelings of personal expressiveness (eudaimonia). In contrast, correlations involving eudaimonia were significantly stronger with measures of the balance of challenges and skills, self-realization values, effort, and importance than were the corresponding correlations with hedonic enjoyment. Second, we empirically distinguished between activities for which both hedonic enjoyment and eudaimonia are present (intrinsically motivated activities) and activities for which hedonic enjoyment alone is present (hedonically enjoyed activities). Intrinsically motivated activities were judged to be significantly higher with respect to measures of the balance of challenges and skills, self-realization values, effort, importance, interest, and flow experiences. No differences between the two categories of activities were found for self-determination and the frequency with which activities were performed. Given these distinguishable patterns in the two conceptions of happiness, a reconceptualization for the understanding of intrinsic motivation is proposed.

KEY WORDS: intrinsic motivation, hedonic enjoyment, eudaimonia, self-determination, self-realization, effort.

A distinction has emerged in the psychological literature between hedonic enjoyment and eudaimonia as alternative conceptions of happiness (Ryan and Deci, 2001; Waterman, 1993). The central premise to be advanced here is that the differences between these two positive subjective states have important implications for the understanding of intrinsic motivation.

Within ethical philosophy, happiness has long been proposed as the ultimate goal of human functioning. However, given the differences between the two conceptions of happiness outlined below, the nature of that goal should be interpreted quite differently. Hedonic enjoyment refers to the positive affects that accompany getting or having the material objects and action opportunities one wishes to possess or to experience (Kraut, 1979). The proponents of ethical hedonism, for example, Aristippus of Cyrene and Jeremy Bentham, contended that such pleasure is the sole good and that the “good life” consists of maximizing such experiences. In contrast, eudaimonia has been defined not in terms of being pleased with one’s life, but as the subjective experiences associated with doing what is worth doing and having what is worth having (Norton, 1976; Telfer, 1980). Eudaimonistic ethics can be traced to the work of Aristotle (trans. 1985) and proposes that the goal of human functioning is to live in a manner consistent with one’s daimon, or true self, where the daimon represents one’s best potentials. “Living in truth to the daimon” entails selecting life goals on the basis of one’s inherent nature, with the pursuit of such goals giving purpose and meaning to one’s life (Norton, 1976). Acting in a manner to advance or realize those life goals and personal potentials is held to be what is worth doing, and that which can serve to facilitate such self-realization is taken to constitute that which is worth having (Norton, 1976). Eudaimonia, as a subjective state, refers to the feelings present when one is moving toward self-realization in terms of the developing one’s unique individual potentials and furthering one’s purposes in living.

Viewed in this way, the two conceptions of happiness are both positive subjective states experienced to greater extents when one is engaged in some activities than when engaged in others. They are not, however, independent constructs. When

individuals consider the development of personal potentials important, and when they are engaged in activities yielding some success in realizing those potentials, then both hedonic enjoyment and eudaimonia will be experienced. From a philosophical perspective, eudaimonia has been deemed a sufficient, but not a necessary, condition for hedonic enjoyment (Telfer, 1980). There are many things that a person may wish to have or to do that bear no relationship to the development of individual potentials. Engaging in activities that yield some success in attaining goals unrelated to personal potentials would be expected to give rise to hedonic enjoyment but not to eudaimonia. Thus, there are three conceivable categories of activities, (a) those for which both hedonic enjoyment and eudaimonia are experienced; (b) those for which hedonic enjoyment, but not eudaimonia, is experienced; and (c) those giving rise to neither hedonic enjoyment nor eudaimonia. From a eudaimonistic philosophical perspective, the category of activities giving rise to eudaimonia but not hedonic enjoyment is a theoretical null.

The distinctions between hedonic enjoyment and eudaimonia can be considered at four interrelated levels of analysis: (a) the instance or event, (b) the activity, (c) the individual, and (d) groups (Larson and Delespaul, 1992; Scollon et al., 2003).¹With regard to the instance, at any particular point in time a person may be engaged in activities falling within any of the three categories described above, such that either or both subjective experiences may or may not be present. The study of the two conceptions of happiness at this level may involve either diary keeping or use of the Experience Sampling Method (ESM) (Csikszentmihalyi and Larson, 1987; Scollon et al., 2003) as methods to promote an idiographic understanding of what is taking place at any given point in time for a given person.

At the level of the activity, because subjective experiences will vary from instance to instance, evaluations of the two conceptions of happiness are aggregated across instances of engagement in various activities. The goal at this level is to identify characteristics of activity-types (e.g., social activities, service activities) that promote hedonic enjoyment and/or eudaimonia. Such characteristics extend beyond the domain or content of activities to include

their motivation, conditions, and outcomes. This aggregation across instances may be done by a researcher averaging diary or ESM reports for a particular type of activity across occasions or through having research respondents create a global rating of the subjective experiences present on a typical occasion of engaging in an activity. Waterman and colleagues (Waterman, 1993, 2004; Waterman et al., 2003) have studied hedonic enjoyment and eudaimonia at the activity level using the latter approach. The instrument employed, the Personally Expressive Activities Questionnaire (PEAQ) makes use of an idiographic-nomothetic methodology (Emmons, 1999). The PEAQ is idiographic in that each respondent identifies several activities that are personally salient, with the nature of these activities varying from person to person. The procedure is nomothetic in that activities with similar contents or characteristics can be grouped together, across respondents, and compared with respect to the two conceptions of happiness and other measures. The particulars of the PEAQ used in the present research are presented below.

At the level of the individual, the study of the two conceptions of happiness involves a distinction between hedonic well-being and eudaimonic well-being (Ryan and Deci, 2001). Individuals undoubtedly differ in terms of the range of activities giving rise to either or both of these subjective states and in the proportion of time that either or both are experienced. Thus, at the level of the individual, a summary statement is created regarding the extent to which the person is functioning with respect to each of the conceptions of happiness. Such summary statements can be generated by aggregating data obtained through ESM or an idiographic-nomothetic questionnaire, or through personality measures such as those used to assess subjective well-being (Diener and Lucas, 2000). Research at the level of the individual can be directed toward identifying the developmental antecedents, concurrent behaviors, and consequences of functioning to differing extents with respect to either or both hedonic enjoyment and eudaimonia. The creation of individual scores with respect to well-being also affords the opportunity for group-level comparisons, for example, in terms of age, gender, ethnicity, or nationality differences.

The Purposes of the Current Study

The current study is part of a program of research using the activity as the level of analysis. One goal of the study was to test hypotheses concerning the nature of the relationship between hedonic enjoyment and eudaimonia at this level and to determine whether differences between the two subjective states, in terms of relationships to predictor and comparison variables, could be reliably documented. On the basis of both theory and prior research, variables associated with intrinsic motivation were selected to test for differences between hedonic enjoyment and eudaimonia. If the hypothesized differences were to be confirmed, the second goal here was to use the findings to re-examine what it means to say that an activity is intrinsically motivated.

Four hypotheses, grounded in eudaimonistic identity theory (Waterman, 1990, 1992, 2004), were tested in the study reported here:

- (1) When examining the subjective experiences associated with activities, a very strong positive correlation should exist between measures of hedonic enjoyment and eudaimonia.
- (2) Because activities giving rise to eudaimonia are considered a subset of activities giving rise to hedonic enjoyment, an asymmetry should exist with respect to the relationship between measures of the two conceptions of happiness. A substantially larger percentage of activities reported to be high on eudaimonia will also be rated high on hedonic enjoyment, compared to the percentage of activities high on hedonic enjoyment that are also rated high on eudaimonia.
- (3) Because activities giving rise to eudaimonia are considered a subset of the activities giving rise to hedonic enjoyment, it should be possible to identify aspects of activities for which the correlations with eudaimonia are stronger than are the correlations with hedonic enjoyment, while for other aspects of activities the reverse may be the case. More precisely, for variables associated with self-realization the correlations with eudaimonia should be stronger than correlations with hedonic enjoyment, whereas for variables unrelated to self-realization, no differences in the strength of the correlations would be expected or perhaps

those involving hedonic enjoyment may be stronger than correlations with eudaimonia.

- (4) Demonstrating that the subjective conditions of hedonic enjoyment and eudaimonia are reliably distinguishable provides a basis for asking the more specific question as to whether, and what ways, activities for which both subjective states are present differ from activities for which hedonic enjoyment alone is present. Again, it would be predicted that the two types of activities would differ with respect to variables associated with self-realization, whereas no differences may be anticipated for variables unrelated to self-realization.

Eudaimonistic Identity Theory

In addressing the question as to what criteria could be used to distinguish “better” from “poorer” choices an individual could make in the process of identity formation, Waterman (1992, 2004) proposed that “better” choices were those consistent with a person’s inherent nature or daimon. In other words, identity development will proceed most successfully when individuals are able to identify their best potentials and engage in activities that move them toward realizing those potentials. Further, Waterman (1990, 1993) proposed that a person comes to recognize those potentials through experiences of eudaimonia, which at the psychological level, he termed “feelings of personal expressiveness”². Whereas some activities that are experienced positively are associated with hedonic enjoyment alone, other activities give rise to both hedonic enjoyment and feelings of personal expressiveness. From the perspective of eudaimonistic identity theory, activities associated with both subjective states are most likely to result in progress toward self-realization and are most worth pursuing in a sustained manner.

Waterman (1990) first linked feelings of personal expressiveness with intrinsic motivation, in part because such feelings bear a strong resemblance to the subjective states said to be associated with such motivation, specifically to Csikszentmihalyi’s (1975, 1990) description of flow experiences and to the description of interest provided by Deci and Ryan (1985) and Krapp et al. (1992). It should be noted, however, that interest appears

to represent a less intense state and is more frequently experienced than either flow or feelings of personal expressiveness (Waterman et al., 2003). There may also be an asymmetry between flow experiences and personal expressiveness, with flow experiences endorsed more frequently (Waterman et al., 2003).

It is also universally recognized that intrinsically motivated activities are hedonically enjoyed. However, given that some activities a person may engage in are associated with both conceptions of happiness whereas others are associated with hedonic enjoyment alone, the question can be raised as to whether the concept of intrinsic motivation should be applied equally to both sets of activities. For example, a person may enjoy both successfully negotiating the twists and turns of a difficult downhill ski run and enjoying a fine dinner with wine by the fire after skiing. Because both types of activities are enjoyed, both are engaged in for the sake of the activities themselves, rather than for any extrinsic considerations. Presumably, downhill skiing is more likely to involve actualizing the individual's athletic potentials and therefore more likely to give rise to experiences of both eudaimonia and hedonic enjoyment, whereas having a fine meal is more likely to be primarily a hedonically enjoyed experience. Given traditional definitions of intrinsic motivation, both activities would be characterized as intrinsically motivated. However, the present analysis of the two conceptions of happiness opens the possibility that potential benefits for the understanding of motivation would result from distinguishing between activities based on the nature of the enjoyment experienced. It is proposed here that the term "intrinsic motivation" be employed when activities are associated with both hedonic enjoyment and eudaimonia, whereas the term "hedonic motivation" should be used when only hedonic enjoyment is present.

The ability to empirically investigate this proposed distinction between categories of activities with respect to their motivation is contingent on the availability of measures for assessing the two conceptions of happiness and on the demonstration of discriminant validity for those measures. As specified in the hypotheses previously listed, differences between two positive subjective states of hedonic enjoyment and eudaimonia are

expected with respect to variables associated with self-realization, with those variables more strongly associated with the latter than the former. Assuming that the two subjective states can be reliably distinguished, it would then become possible to investigate possible differences between intrinsically motivated and hedonically motivated activities by establishing criteria for when either or both forms of enjoyment is/are present.

Variables Associated with Intrinsic Motivation

Theories pertaining to intrinsic motivation, including cognitive-evaluation/self-determination theory (Deci and Ryan, 1985, 2002), the teleonomic theory of the self/flow theory (Csikszentmihalyi, 1990), and eudaimonistic identity theory (Waterman, 1990, 2004) have helped to identify two types of variables that differentiate intrinsically motivated activities from other activities. One type involves a set of predictor variables including (a) self-determination or autonomy in the selection of activities (Ryan, 1993), (b) the presence of a high level of challenges balanced with a high level of skills (Csikszentmihalyi, 1988), and hence the experience of developing competence (Deci and Ryan, 1985), (c) self-realization values (Waterman, 1990), referring to perceptions that an activity advances the development of personal potentials and the attainment of personally salient goals, and (d) the level of effort invested in activities (Waterman, 2005). The second set of variables pertains to the subjective states present when engaged in intrinsically motivated activities. These include (a) enjoyment (Deci and Ryan, 1985)³, (b) interest (Deci and Ryan, 1985), (c) flow (Csikszentmihalyi, 1975, 1990)⁴, and (d) feelings of personal expressiveness (Waterman, 1990).

In a series of studies, Waterman et al. (2003) documented that the subjective experience measures of interest, flow experiences, and feelings of personal expressiveness are strongly intercorrelated. In contrast, although the balance of challenges and skills was significantly correlated with self-realization values, neither of those variables was reliably related to self-determination. In other words, engaging in personally salient activities involving a high level of competence and that are viewed as advancing personal potentials are as likely to be perceived as constrained or

required as to be freely chosen. This finding, while highly replicable, appears counter-intuitive, given the presumption that individuals would wish to engage in, and would autonomously choose to perform, activities associated with flow experiences and self-realization. The explanation for the observed pattern of correlations involves two elements. First, a substantial number of activities listed on the PEAQ by respondents do not entail a balance of challenges and skills or promote self-realization yet are hedonically enjoyed and for that reason are freely chosen, thus serving to weaken any association of self-determination with the balance of challenges and skills and self-realization values. Second, a substantial number of the activities listed that do involve a balance of challenges and skills and which do foster self-realization pertain to educational and work experiences and are seen as constrained rather than freely chosen. This constraint may further weaken the associations of self-determination with other predictor variables of intrinsic motivation.

This disjunction between self-determination and other predictors of intrinsic motivation is important for the understanding of Hypotheses 3 and 4 advanced here. In Hypothesis 3 it is predicted that eudaimonia and hedonic enjoyment will differ in the strength of their associations with variables related to self-realization. The strongest differences would be predicted for the variable of self-realization values, with other significant differences anticipated for the balance of challenges and skills and level of effort. Additionally, a difference would be expected with regard to flow experiences given that this subjective experience variable is linked with the balance of challenges and skills and with self-realization values. However, the fact that self-determination is independent of the other predictor variables of intrinsic motivation suggests that it does not have any special relationship with self-realization for the reasons specified above. Therefore, the correlations of eudaimonia and hedonic enjoyment with self-determination may not differ in magnitude. Similarly, for Hypothesis 4, it is predicted that intrinsically motivated and hedonically motivated activities will differ with respect to those variables linked to self-realization but not on variables unrelated to that construct.

It should also be noted that, although the balance of challenges and skills and self-realization values are correlated empirically, the variables are conceptually distinct. A combination of a high level of challenge and a high level of skill may be present for a great number of activities about which a person cares little. The observed correlation can be interpreted as a function of the fact that the activities evaluated on the PEAQ were selected on the basis of personal salience, a condition under which these variables are particularly likely to be related. Similarly, the level of effort invested in an activity has been observed to be significantly correlated with both the balance of challenges and skills and self-realization values. Here too, effort should not be considered as equivalent to the other variables. For example, individuals may choose to invest considerable effort in activities for which they lack substantial talent and or when motivated by strong extrinsic considerations. In both instances the effort expended would be unrelated to the development of personal potentials.

With particular relevance for the understanding of intrinsic motivation, among the most important findings from the series of studies reported in Waterman et al. (2003) was that the predictor variables were reliably and significantly positively correlated with interest, flow experiences, and personal expressiveness, despite the independence of self-determination from the balance of challenges and skills and from self-realization values.

Previous Research on the Relationship between Hedonic Enjoyment and Eudaimonia

Waterman (1993) developed the PEAQ to assess both hedonic enjoyment and feelings of personal expressiveness. In the initial version of the questionnaire, two items were used to assess each of the two subjective states. In a subsequent version, six items were used to assess each state (see Table I for a listing of the items on the two scales). Consistent with Hypothesis 1 in the present study, the correlation between hedonic enjoyment and eudaimonia was 0.71 for the 2-item version and 0.86 for the 6-item version (Waterman, 1993). Consistent with Hypothesis 2, the expected asymmetry between the two conceptions of

happiness was also observed in that study. For both the 2-item and 6-item versions of the scales, significantly higher percentages of activities high on eudaimonia were also reported high on hedonic enjoyment, compared to the percentages of activities high on hedonic enjoyment that were also reported high on eudaimonia.

With respect to Hypothesis 3, Waterman (1993) adopted an exploratory approach in an effort to identify variables with differential relationships to hedonic enjoyment and to eudaimonia. In those studies, for both versions of the PEAQ, significantly stronger correlations for feelings of personal expressiveness, in comparison to hedonic enjoyment, were found for items pertaining to the extent to which activities were associated with opportunities to develop one's best potentials, investing a great deal of effort, having clear goals, feeling assertive, and feeling challenged. In addition, for the 6-item

TABLE I
PEAQ items assessing hedonic enjoyment and feelings of personal expressiveness (eudaimonia)

Hedonic enjoyment items

1. When I engage in this activity I feel more satisfied than I do when engaged in most other activities
2. This activity gives me my strongest sense of enjoyment^a
3. When I engage in this activity I feel good
4. This activity gives me my greatest pleasure^a
5. When I engage in this activity I feel a warm glow
6. When I engage in this activity I feel happier than I do when engaged in most other activities

Feelings of personal expressiveness (eudaimonia) items

1. This activity gives me my greatest feeling of really being alive^a
 2. When I engage in this activity I feel more intensely involved than I do when engaged in most other activities
 3. This activity gives me my strongest feeling that this is who I really am^a
 4. When I engage in this activity I feel that this is what I was meant to do
 5. I feel more complete or fulfilled when engaging in this activity than I do when engaged in most other activities
 6. I feel a special fit or meshing when engaging in this activity
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^aItems included on the original PEAQ 2-item scales.

scales only, significantly higher correlations were obtained for items pertaining to having a high level of concentration and knowing how well one was doing. In contrast, for both the 2 and 6 item versions of the scales, significantly higher positive correlations were found with hedonic enjoyment for items pertaining to feeling relaxed, excited, content, happy, losing track of time, and forgetting personal problems. Significantly stronger negative correlations were found between hedonic enjoyment and feeling angry, restless, anxious, and confused than between personal expressiveness and these variables. This overall pattern of findings substantiated the proposition that distinctions could reliably be drawn between hedonic enjoyment and eudaimonia. Whereas several of the items for which differences were found appear relevant to intrinsic motivation, these initial studies were exploratory and were not designed for assessing systematic differences between the two subjective states in terms of variables demonstrated to be associated with such motivation.

The Present Research

Based on these initial findings of differences between the two conceptions of happiness, and on the theoretical considerations pertaining to intrinsic motivation presented above, the current version of the PEAQ was developed (the PEAQ-S, for Standard). On this instrument, each participant identifies five personally salient activities and evaluates these activities on 6-item scales for feelings of personal expressiveness and hedonic enjoyment and on two additional subjective conditions associated with intrinsic motivation—interest and flow experiences. In addition to the subjective experience measures the PEAQ-S includes a series of scales tapping the four predictors of intrinsic motivation self-determination, the balance of challenges and skills, self-realization values, and the level of effort invested in the performance of the activity. Two additional potential predictor variables deemed to be relevant but that have not been specifically associated with intrinsic motivation are also assessed: the frequency with which the activities are enacted and their rated importance. Frequency is a variable that is considered concep-

tually independent of self-realization, whereas it is anticipated that activities promoting self-realization would be considered more important than activities that do not.

For the research reported in this article, the PEAQ-S was administered to samples in three institutions of higher education: a small state university with a primarily White student population, a large state university with a primarily minority student body, and a private university with a primarily White student population. Given that respondents in all three samples completed the same instrument, it would be appropriate to combine the samples for addressing the four hypotheses under investigation here. However, the decision was made to analyze the datasets from the three schools separately, as this provides a basis for determining the replicability and generalizability of the findings obtained across the three different student populations.

METHOD

Participants and Procedures

Site 1. The College of New Jersey

Participants were 217 undergraduates (147 women, 65 men, and five students unidentified with respect to gender) enrolled in psychology courses. This gender distribution reflects the approximate gender distribution within those courses. Approximately 90% of the student population at the school is non-Hispanic White, about 10% other ethnic groups. The PEAQ-S was administered to this sample in group settings. The PEAQ-S was presented following a brief demographic instrument and prior to a series of other measures. Participants received credit toward the research participant requirement in their courses.

Site 2. Florida International University

Participants were 202 undergraduates (121 women, 67 men, and 14 students unidentified by gender) enrolled in psychology courses. In terms of ethnicity, the sample was 19% non-Hispanic White, 8% non-Hispanic Black, 59% Hispanic, 4% Asian and 10% unidentified with respect to ethnicity. These percentages are

representative of the student body at Florida International University. Participants were given questionnaire packets in which the PEAQ-S was preceded only by a demographic form. Participants completed the questionnaire packets at home over the weekend and returned them to their instructors the following week. They received course credit for their participation.

Site 3. Colgate University

Participants were 218 undergraduate (149 women, 68 men, and one student unidentified with respect to gender) enrolled in two Introductory Psychology courses. The courses sampled were 86% non-Hispanic White, 6% Asian, 4% Black, and 3% Hispanic. These proportions are similar to those of the university as a whole. All students in both courses received an e-mail inviting them to participate in the study. The e-mail included a link that brought students to a website that presented the questionnaire. The web version of the PEAQ-S used the same format and response options as the paper version. Completion of the online administration of the questionnaire partially fulfilled a course requirement.

Instrument

At each of the three sites, the PEAQ-S was administered as part of larger studies. The opening instructions for the PEAQ-S read as follows: “If you wanted another person to know about who you are and what you are like as a person, what five (5) activities of importance to you would you describe?” Each activity is then evaluated in turn on a series of items/scales, each using a 7-point response format. The labeled endpoints for the items vary from scale to scale.

Scales for Hedonic Enjoyment and Feelings of Personal Expressiveness (Eudaimonia)

The items on the scales for hedonic enjoyment and feelings of personal expressiveness (see Table I) were intermixed within a set using the same response choices. The labeled end-points for the response scale were “strongly agree” and “strongly disagree”.

Other Subjective Experience Measures of Intrinsic Motivation

Interest

Interest was assessed with one item pertaining to the usual level of interest experienced when engaged in the activity. The response scale ranged from “very low” to “very high”.

Flow experiences

Flow experiences were measured using an eight-item scale with items corresponding to elements identified by Csikszentmihalyi (1990). The items were phrased as completions of a common stem: “When I engage in this activity _____.” The item completions for this scale were the following: (a) I feel I have clear goals, (b) I feel self-conscious (reverse-scored), (c) I feel in control, (d) I lose track of time, (e) I feel I know how well I am doing, (f) I have a high level of concentration, (g) I forget personal problems, and (h) I feel fully involved. These items were embedded among a series of other sentence completions not specific to flow experiences. Each item was responded to on a scale ranging from “not at all characteristic of me” to “very characteristic of me”.

Predictor Measures of Intrinsic Motivation

Self-determination

Self-determination was assessed as the sum of two items adapted from Graef et al. (1983). The first item read “To what extent do you usually feel that engaging in this activity is something you are required to do or is your choice to do?” The endpoints of the scale were “required to do” and “my choice to do”. The second read “When engaging in this activity, to what extent do you wish you were doing something else?”, with the endpoints of the scale labeled “not at all” and “very much” (reverse scored).

Balance of Challenges and Skills

Perceived competence, in the form of the balance of challenges and skills, was measured as the sum of two items. The first item refers to the usual level of challenges encountered when engaged

in the activity, and the second item refers to the level of skills the respondent usually brings to the activity. For both items, the scale endpoints were “very low” and “very high”. High scores on this measure can only be obtained when the level of challenges and skills are both balanced and high, corresponding to the condition Csikszentmihalyi (1988) termed “flow”. Low scores are obtained when the levels of both elements are low, corresponding to the condition associated with apathy. Intermediate scores are obtained when both variables are intermediate or when one is high and the other low, corresponding to the conditions either for boredom or for anxiety.

Self-Realization Values

Self-realization values were assessed by two summed items embedded within a series of items with the stem: “To what extent does this activity provide you with each of the following types of opportunities?” The relevant completions were “the opportunity for me to develop my best potentials” and “the opportunity for me to make progress toward my goals”. Each item was associated with a scale with the endpoints identified as “not at all” and “very extensively”.

Effort

The level of effort associated with each activity was assessed by one item reading: “What is the usual level of effort you invest when you engage in this activity?” The scale ranged from “very low” to “very high”.

Measures of Frequency and Importance

Frequency

The frequency of each activity was assessed by one item reading: “How often have you engaged in this activity in the past year?” The endpoints of the scale were identified as “very seldom” and “very frequently”.

Importance

The importance of each activity was assessed by one item reading: “Overall, how important is this activity to you in your

life?” The endpoints of the scale were identified as “not at all important” and “extremely important”.

RESULTS

Considerations Bearing on the Data Analysis

As indicated earlier, the unit for analysis in this study was the activity rather than the individual. Each participant provided evaluations for five activities. The activities for any person could potentially vary extensively with respect to both the levels of hedonic enjoyment and feelings of personal expressiveness experienced, as well as on the other variables of interest. As a result, collapsing ratings across activities to create overall scores for each participant might have resulted in loss of information germane to the study hypotheses. The hypotheses investigated here were specified at the level of the activity given that hedonic enjoyment and feelings of personal expressiveness are experienced differently for each particular activity evaluated.

Data from this study were used to calculate intraclass correlations as a way to determine the amount of variance explained at the level of the individual compared with the amount of variance explained at the level of the activity. For both the measures of hedonic enjoyment and feelings of personal expressiveness, as well as the other variables under investigation, the very substantial majority of variability (between 69% and 92%) was accounted for at the level of the activity. As a result, although it would be possible to use multilevel modeling (Raudenbush and Bryk, 2002) to control for nesting of activities within participants, the proportionally small amount of variability accounted for at the individual level suggests that the use of multilevel modeling would have a minimal effect upon the results (Schwartz and Waterman, in press).

For the test of Hypotheses 1, 2, and 3, all activities generated by respondents from each site were employed in the analyses. For Hypothesis 4, only those activities meeting the criteria for intrinsic motivation or hedonic motivation were used in the analyses. In the evaluation of Hypothesis 3, comparisons of the correlations for hedonic enjoyment and personal expressiveness

with the other variables were conducted using *t*-tests for the significance of differences between paired correlations from the same sample (Ferguson, 1959). Because the number of activities included in each analysis is substantially larger than the number of participants, we included an added step to ensure that the additional degrees of freedom did not create increased risk of Type 1 errors. Across sites, we analyzed the data separately for the activities in each serial position, one activity per person, yielding five replications of each analysis. The conclusions derived from this replication procedure differed little from those derived from including all activities for a given site in the same analysis. As a result, findings are reported using all activities in a single analysis.

Hypothesis 1. The Relationship between Hedonic Enjoyment and Eudaimonia

We anticipated a very strong positive correlation between the measures for hedonic enjoyment and feelings of personal expressiveness. This hypothesis was confirmed for all three sites. The correlations were 0.87, 0.85, and 0.83 for Sites 1, 2, and 3, respectively. These correlations indicate that, across samples, these two measures share between 68% and 76% of variability in common.

Hypothesis 2. An Asymmetry in the Relationship of Hedonic Enjoyment and Eudaimonia

The very strong correlations between hedonic enjoyment and personal expressiveness notwithstanding, Hypothesis 2 (regarding an asymmetry in the relationship between the variables) was supported by the data from all three sites. To evaluate this hypothesis, activities were divided into High and Low categories on both the scales for hedonic enjoyment and personal expressiveness. Categories were created using an a priori cut score equivalent to an average item response of 6 on the 7-point scale. This constitutes a very stringent criterion for considering an activity to be “High” on hedonic enjoyment or on personal expressiveness.

Evaluation of this hypothesis proceeded in two steps. In the first step, 2×2 contingency tables were created for activities categorized as High and Low on hedonic enjoyment and personal expressiveness (see Table II). Chi-square analyses were highly significant at each of the three sites, with activities Low on both indices being the most frequently listed, followed in order by those High for both subjective states, those High on hedonic enjoyment and Low on personal expressiveness, and those High on personal expressiveness and Low on hedonic enjoyment. The latter category is a theoretical null and constituted only 2–4% of all of the activities listed. The few activities in this category are likely to have been a consequence of both the stringent criteria used as cut-points and measurement error.

The second step involved comparing (a) the proportion of activities High on feelings of personal expressiveness that were also rated High on hedonic enjoyment with (b) the proportion rated High on hedonic enjoyment that were also High on personal expressiveness. At Site 1, 88.4% of the activities High on feelings of personal expressiveness were also rated High on hedonic enjoyment, whereas only 67.9% of activities rated High on hedonic enjoyment were also rated High on personal expressiveness. This asymmetry was highly significant, $\chi^2(1) = 525.78$, $p < 0.0001$, $w = 0.70$. At Site 2, 81.4% of the activities High on feelings of personal expressiveness were also rated High on hedonic enjoyment, whereas only 61.3% of activities rated

TABLE II

Cross-tabulations of the frequency of respondents high and low on personal expressiveness and hedonic enjoyment

	Site 1		Site 2		Site 3	
	Hedonic enjoyment		Hedonic enjoyment		Hedonic enjoyment	
Personal expressiveness						
Low	28	214	33	144	25	182
High	730	101	575	91	732	117
	$\chi^2 = 525.78^*$		$\chi^2 = 318.70^*$		$\chi^2 = 450.71^*$	

* $p < 0.0001$.

High on hedonic enjoyment were rated High on personal expressiveness. Again, the asymmetry was highly significant, $\chi^2(1) = 318.70$, $p < 0.0001$, $w = 0.56$. Similarly, at Site 3, 87.9% of the activities High on feelings of personal expressiveness were rated High on hedonic enjoyment, whereas only 60.9% of activities rated high on Hedonic enjoyment were also rated High on personal expressiveness. The asymmetry was again highly significant, $\chi^2(1) = 450.71$, $p < 0.0001$, $w = 0.64$. The asymmetry between personal expressiveness and hedonic enjoyment, replicated across the three sites, supports the expectation that considerably more activities would give rise to high levels of hedonic enjoyment than to high levels of personal expressiveness. Further, the finding that over four-fifths of the activities associated with eudaimonia were also high on hedonic enjoyment, whereas one-third or more of the activities high on hedonic enjoyment were not associated with eudaimonia, is consistent with the proposition that eudaimonia is a sufficient, but not a necessary condition for experiencing hedonic enjoyment.⁵

Hypothesis 3: Differences in the Strength of Correlations of Hedonic Enjoyment and Eudaimonia with Variables Associated with Intrinsic Motivation

Zero Order Correlations

The starting point for identifying possible differences in the strength of correlations between the two conceptions of happiness with scales for variables associated with intrinsic motivation was to create a zero-order correlation table for relevant variables from the PEAQ-S. Table III contains these correlations for the data sets from all three sites. The patterns of association obtained here replicate the findings reported by Waterman et al. (2003).

Comparisons of Hedonic Enjoyment and Eudaimonia

The test of Hypothesis 3 involves the evaluation of the relative strengths of the associations of hedonic enjoyment and personal expressiveness with the four predictor variables (self-determination, the balance of challenges and skills, self-realization values, and level of effort), with interest and flow experiences, and with

TABLE III
Zero order correlations among the PEAQ-S variables at three sites

Variable	2	3	4	5	6	7	8	9	10
<i>Predictor variables</i>									
1. Self-determination									
Site 1	-0.14****	-0.09***	0.05	0.62****	0.37****	0.44****	0.61****	0.00	0.11****
Site 2	0.03	-0.07	0.09**	0.45****	0.35****	0.35****	0.48****	0.08*	0.07*
Site 3	-0.17****	-0.08*	0.01	0.53****	0.34****	0.41****	0.58****	0.01	0.13****
2. Balance of challenges and skills									
Site 1	0.52****	0.63****	0.08*	0.36****	0.26****	0.26****	0.08*	0.03	0.16****
Site 2	0.24****	0.28****	0.12***	0.27****	0.15****	0.15****	0.10***	0.13****	0.10****
Site 3	0.55****	0.62****	0.10****	0.34****	0.21****	0.21****	-0.03	-0.02	0.10****
3. Self-realization values									
Site 1	0.47****	0.47****	0.13****	0.39****	0.54****	0.54****	0.34****	0.15****	0.50****
Site 2	0.40****	0.40****	0.21****	0.44****	0.53****	0.53****	0.33****	0.19****	0.46****
Site 3	0.45****	0.45****	0.15****	0.45****	0.49****	0.49****	0.21****	0.08*	0.33****
4. Level of effort									
Site 1	0.29****	0.29****	0.29****	0.46****	0.40****	0.40****	0.26****	0.16****	0.28****
Site 2	0.29****	0.29****	0.29****	0.37****	0.32****	0.32****	0.22****	0.16****	0.22****
Site 3	0.27****	0.27****	0.27****	0.41****	0.33****	0.33****	0.17****	0.07*	0.20****
<i>Subjective experience variables</i>									
5. Interest									
Site 1	0.49****	0.49****	0.49****	0.56****	0.56****	0.56****	0.66****	0.20****	0.33****
Site 2	0.46****	0.46****	0.46****	0.48****	0.48****	0.48****	0.56****	0.29****	0.33****
Site 3	0.37****	0.37****	0.37****	0.51****	0.51****	0.51****	0.58****	0.15****	0.39****

Table III continued

Variable	2	3	4	5	6	7	8	9	10
6. Flow experiences									
Site 1				0.55****			0.55****	0.12****	0.33****
Site 2				0.55****			0.53****	0.20****	0.28****
Site 3				0.49****			0.43****	0.06	0.14****
7. Personal expressiveness (Eudaimonia)									
Site 1							0.87****	0.19****	0.61****
Site 2							0.85****	0.23****	0.50****
Site 3							0.83****	0.14****	0.48****
8. Hedonic enjoyment									
Site 1								0.18****	0.51****
Site 2								0.21****	0.43****
Site 3								0.11****	0.40****
<i>Additional predictor variables</i>									
9. Frequency									
Site 1									0.42****
Site 2									0.39****
Site 3									0.41****
10. Importance									
Site 1									
Site 2									
Site 3									

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; **** $p < 0.0001$.

^aThese correlations involve using the activity as the unit of analysis, thus for each site the number of observations is $n \times 5$.

frequency and importance. The results of *t*-tests for the significance of differences between paired correlations from the same sample are reported in Table IV. The findings can be summarized as follows:

1. Significantly stronger correlations with hedonic enjoyment than with personal expressiveness were found at all three sites for self-determination and interest.
2. Significantly stronger correlations with personal expressiveness than with hedonic enjoyment were found at all three sites for the balance of challenges and skills, self-realization values, the level of effort expended and the self-ascribed importance of the activity.
3. No differences in the strength of the correlations of hedonic enjoyment and personal expressiveness were found for flow experiences and frequency at two of the three sites. At Site 3, both variables were found to have significantly stronger correlations with personal expressiveness.

With only minor exceptions, the pattern of results was highly replicable across the three sites. The finding that the two conceptions of happiness were differentially related to various aspects of intrinsic motivation reconfirms that hedonic enjoyment and eudaimonia, while very strongly interrelated, are nevertheless reliably distinguishable. Further, that those aspects of intrinsic motivation linked with self-realization were more strongly associated with eudaimonia provides an opening for the re-examination of our conceptual understanding of intrinsic motivation.

Additional Analyses Relating to the Contributions of the Predictor Variables to Eudaimonia and Hedonic Enjoyment

To better understand the relative contributions of the various predictor variables to measures of the two conceptions of happiness three sets of indices were calculated: (a) the square of the zero-order correlation (an index of the variability explained by a given predictor in the outcome measure), (b) the square of the partial correlation (an index of the variability explained by a given predictor when all other predictors are held constant), and

TABLE IV
 Comparisons of the strength of correlations with hedonic enjoyment (HE) and feelings of personal expressiveness (PE)

	Site 1			Site 2			Site 3		
	HE	PE	<i>t</i>	HE	PE	<i>t</i>	HE	PE	<i>t</i>
<i>Predictor variables</i>									
Self determination	0.61****	0.44***	-13.82****	0.48****	0.35****	-7.90****	0.58****	0.41****	-12.03****
Balance of challenges and skills	0.08*	0.26****	13.48****	0.10**	0.15****	2.64**	-0.03	0.21****	≈14.00****
Self-realization values	0.33****	0.54****	15.70****	0.33****	0.53****	12.76****	0.21****	0.49****	19.51****
<i>Subjective experience variables</i>									
Interest	0.66****	0.56****	-8.92****	0.56****	0.48****	-5.10****	0.58****	0.52****	-4.17****
Flow experiences	0.54****	0.55****	0.85	0.53****	0.55****	1.27	0.43****	0.49****	3.81***
<i>Additional predictor variables</i>									
Frequency	0.18****	0.19****	0.66	0.21****	0.23****	1.10	0.11****	0.14****	2.12*
Importance	0.51****	0.60****	5.52****	0.43****	0.50****	4.20****	0.40****	0.48****	5.09****
Level of effort	0.26****	0.40****	14.23****	0.22****	0.32****	5.64****	0.17****	0.33****	9.75****

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; **** $p < 0.0001$.

(c) the unique variability explained (UVE) by each predictor (an index of the variability explained by a given predictor when it is entered into a regression equation as the last step). These indices are reported in Table V. The findings can be summarized as follows:

1. Self-realization values and importance explain the largest proportions of variance in eudaimonia when considered in

TABLE V
Statistics relating to the relative contributions of predictor variables to measures of eudaimonia and hedonic enjoyment

Predictor variables	Eudaimonia			Hedonic enjoyment		
	r^2	Partial r^2	UVE	r^2	Partial r^2	UVE
<i>Site 1</i>						
Self-determination	0.19	0.31	0.16	0.37	0.43	0.30
Balance of challenges and skills	0.07	0.00	0.00	0.01	0.00	0.00
Self-realization values	0.29	0.14	0.06	0.11	0.06	0.02
Level of effort	0.16	0.01	0.00	0.07	0.01	0.00
Importance	0.36	0.18	0.08	0.26	0.14	0.06
Frequency	0.04	0.00	0.00	0.03	0.00	0.00
Total variance explained:			63%			60%
<i>Site 2</i>						
Self-determination	0.12	0.20	0.13	0.22	0.27	0.21
Balance of challenges and skills	0.02	0.00	0.02	0.01	0.00	0.00
Self-realization values	0.30	0.19	0.12	0.11	0.05	0.03
Level of effort	0.10	0.01	0.01	0.05	0.00	0.00
Importance	0.26	0.10	0.05	0.18	0.08	0.05
Frequency	0.05	0.00	0.00	0.04	0.00	0.00
Total variance explained:			52%			42%
<i>Site 3</i>						
Self-determination	0.16	0.22	0.15	0.34	0.34	0.27
Balance of challenges and skills	0.04	0.00	0.00	0.00	0.02	0.00
Self-realization values	0.24	0.17	0.10	0.04	0.17	0.02
Level of effort	0.11	0.02	0.01	0.03	0.01	0.00
Importance	0.22	0.10	0.06	0.14	0.08	0.04
Frequency	0.02	0.00	0.00	0.01	0.00	0.00
Total variance explained:			52%			47%

terms of the square of the zero-order correlation, whereas self-determination explains the largest portion of variability in personal expressiveness score in terms of both the square of the partial correlation and UVE. When considering the UVEs, only self-determination, self-realization values, and importance make substantial independent contributions to explaining eudaimonia.

2. Self-determination consistently explains a greater level of variability in the measure of hedonic enjoyment, whether viewed in terms of the square of the zero-order correlation, the square of the partial correlation, or the UVEs. Importance and self-realization values make consistent, but more modest, contributions to explaining variability in hedonic enjoyment.
3. With regard to the measure of eudaimonia, self-determination accounts uniquely for only about one-quarter (26%) of the explained variability, the balance explained by the other predictors either uniquely (31%) or in combination with other variables (including self-determination) (43%). In contrast, for the measure of hedonic enjoyment, self-determination uniquely accounts for just over half (52%) of the explained variability, whereas the other five variables account for only 15% uniquely and with the remaining third (33%) explained by the joint contribution of various predictors (including self-determination).⁶

Here again, there was a high level of consistency in the findings across sites.

Hypothesis 4: Comparisons of Intrinsically and Hedonically Motivated Activities with Respect to the Predictor Variables

Having established that hedonic enjoyment and eudaimonia can be reliably distinguished with respect to the patterns of their relationship with theoretically and empirically derived predictor variables, the final set of analyses was designed to identify the differences between activities for which both hedonic enjoyment and eudaimonia were present versus those for which hedonic enjoyment alone was experienced. These comparisons provide an opportunity for making direct contrasts based on the proposed distinction between intrinsic motivation and hedonic

motivation. These analyses differ from those previously reported in that (a) activities that were characterized by neither hedonic enjoyment nor eudaimonia and (b) those for which eudaimonia, but not hedonic enjoyment, was present were dropped from consideration.

First, as a manipulation check, two 2 (Motivation Category) \times 3 (Site) analyses of variance of variance were conducted to test for differences between the Intrinsic Motivation category (High on both hedonic enjoyment and eudaimonia) and the Hedonic Motivation category (High on hedonic enjoyment; Low on eudaimonia) using scores on personal expressiveness and hedonic enjoyment as the dependent measures. In line with the nature of the types of activities being compared, the Intrinsic Motivation category was significantly higher on personal expressiveness in comparison to the Hedonic Motivation category, $F(1,843) = 1244.58$, $p < 0.0001$, $\eta^2 = 0.60$. Neither the main effect for Site nor the Motivation Category \times Site interaction were significant. However, contrary to the assumption that the two conditions would be equivalent with respect to hedonic enjoyment, the Intrinsic Motivation condition was significantly higher on hedonic enjoyment as well, $F(1,843) = 243.18$, $p < 0.0001$, $\eta^2 = 0.22$. The main effect for Site and the Motivation Category \times Site interaction were again nonsignificant. In view of the latter finding, the level of hedonic enjoyment was used as a covariate in the subsequent ANCOVAs so as to equate the two conditions with respect to this variable. The adjusted means for each of the six predictor variables and for the subjective experience measures of interest and flow are reported in Table VI.

The findings from the series of 2 (Motivation Category) \times 3 (Site) analyses of covariance can be summarized as follows:

1. As predicted regarding main effects for Motivation Condition, the adjusted means were significantly higher for intrinsically motivated activities than for hedonically motivated activities with respect to the following predictor variables: (a) Balance of challenges and skills, $F(1, 808) = 27.31$, $p < 0.0001$, $\eta^2 = 0.03$, (b) Self-realization values, $F(1,837) = 77.66$, $p < 0.0001$, $\eta^2 = 0.09$, (c) Importance,

TABLE VI
Adjusted means for the predictor variables for comparisons of intrinsically motivated and hedonically motivated activities^a

	Site 1		Site 2		Site 3	
	Intrinsically motivated activities	Hedonically motivated activities	Intrinsically motivated activities	Hedonically motivated activities	Intrinsically motivated activities	Hedonically motivated activities
<i>Predictor variables</i>						
Self determination	12.64	13.10	12.94	12.66	12.93	12.60
Balance of challenges and skills	10.37	7.58	10.31	10.17	9.60	8.43
Self-realization values	11.90	9.19	11.14	9.34	11.35	9.30
Level of effort	6.34	5.07	5.86	5.77	6.08	5.18
<i>Additional predictor variables</i>						
Frequency	6.07	5.85	6.09	5.85	6.15	5.97
Importance	6.54	6.01	6.26	5.87	6.49	6.36

^aHedonic enjoyment scores used as a covariate.

- $F(1,842) = 16.77, p < 0.0001, \eta^2 = 0.02$, and (d) Effort, $F(1,840) = 33.67, p < 0.0001, \eta^2 = 0.04$.
2. The adjusted means were significantly higher for intrinsically motivated activities than for hedonically motivated activities with respect to the subjective experience measures of (e) Interest, $F(1,839) = 4.80, p < 0.05, \eta^2 = 0.01$, and (f) Flow experiences, $F(1,835) = 36.02, p < 0.0001, \eta^2 = 0.04$.
 3. The adjusted means for the intrinsic motivation and hedonic motivation conditions were not significantly different with respect to either (g) Self-determination, $F(1,840) = 0.02, ns$, or (h) Frequency, $F(1,841) = 3.36, ns$.
 4. For these analyses, occasional significant main effects for Site and significant Motivation Condition \times Site interactions were observed, though they did not occur in any consistent pattern.⁷

DISCUSSION

The two principal objectives for the research reported here were (a) to replicate and extend the finding that hedonic enjoyment and eudaimonia represent interrelated positive subjective states that can be reliably distinguished from one another, and (b) to explore the implications of that distinction for the understanding of intrinsic motivation. The four hypotheses advanced here were each supported with three independent data collections using the PEAQ-S.

As expected, the scales measuring hedonic enjoyment and eudaimonia were very highly correlated. Because the intercorrelations between the two indices of happiness were consistently above 0.80, the task of demonstrating discriminant validity between these indices becomes quite challenging.

Nonetheless, the hypothesized asymmetry between hedonic enjoyment and eudaimonia was supported by the results. When an activity was rated as high on eudaimonia, its probability of receiving similarly high ratings on hedonic enjoyment was extremely high. However, when an activity was rated high on hedonic enjoyment, the probability of receiving comparably high ratings on eudaimonia was substantially lower. From the support for Hypotheses 1 and 2 in the present results, it appears

that there are two broad classes of activities associated with positive subjective states—those giving rise to both eudaimonia and hedonic enjoyment, and those giving rise to hedonic enjoyment but not to eudaimonia. The category of activities high on eudaimonia but low on hedonic enjoyment has been considered a theoretical null within philosophy, and it approached an empirical null in the research reported here.

Working with the proposition that hedonic enjoyment and eudaimonia involve differing, though interrelated, subjective experiences, it should then be possible to demonstrate reliably differing patterns of association in the variables correlated with these two subjective conditions (as was proposed via Hypothesis 3). Such an expectation was supported, with consistent findings indicating significantly stronger zero-order correlational associations of self-determination and interest with hedonic enjoyment and significantly stronger associations of the balance of challenges and skills, self-realization values, importance, and effort with eudaimonia. Although this pattern is consistent with the findings obtained by Waterman (1993), the present study extends prior research by establishing the presence of differences specifically on a series of variables with documented relevance to intrinsic motivation.

Intrinsic Motivation Reconsidered

In the Introduction the following rhetorical question was posed: Should successfully negotiating the twists and turns of a difficult downhill ski run and enjoying a fine dinner with wine by the fire after skiing both be considered as intrinsically motivated activities, when both give rise to enjoyment and both are engaged in for the activities themselves, rather than for extrinsic considerations? It is highly probable that most people who engage in these activities would describe them as personally chosen (i.e., self-determined), given that neither is likely to involve obligations nor any rewards beyond the experiences themselves (professional skiers aside). However, the two activities will almost certainly differ in the level of balance of challenges and skills involved and, for some, will differ as well with respect to the involvement of self-realization values. While

some people would say they “live to ski”, for others skiing may represent nothing more than an enjoyable diversion, even when they are very good at it. In the latter instance, such feelings could be considered similar to those typically associated with consuming a fine meal with wine. Note also that an activity like skiing that requires a greater expenditure of effort, involves a higher level of competence, and promotes the development of a person’s potentials is likely to be interpreted as more important than is an activity like fire-side dining that does not.

It was hypothesized that a meaningful division can be created within the category of activities that has traditionally been termed “intrinsically motivated”, that is, activities that are enjoyed in and of themselves rather than because of extrinsic considerations. The division proposed here corresponds to the distinction between (a) those activities giving rise to both hedonic enjoyment and eudaimonia and (b) those giving rise to hedonic enjoyment alone. The former can be said to be intrinsically motivated, the latter were termed hedonically motivated. Consistent with Hypothesis 4, when comparisons were undertaken between activities in these two categories, across sites and controlling for the level of hedonic enjoyment present, intrinsically motivated activities were found to be associated with higher scores for four variables linked to self-realization: the balance of challenges and skills, self-realization values, level of effort, and importance. Intrinsically motivated activities were also rated as higher on interest and flow experiences. No differences were found for the indices of self-determination or frequency.

As the results obtained here indicate, the role of self-determination with respect to intrinsic and hedonic motivation appears complex. According to Deci and Ryan (1985, 2002), self-determination or autonomy in the choice of activities is an important requirement for intrinsic motivation. Such a conclusion continues to be applicable when the distinction is made between intrinsic and hedonic motivation. The zero-order correlations of the measure of self-determination with measures of both hedonic enjoyment and eudaimonia were very strong, and the partial correlations and UVEs indicated that this variable was the strongest independent predictor of both types of subjective

experiences. The *t*-test comparisons regarding the strength of the zero-order correlations for the two subjective experience indices revealed significantly stronger associations with hedonic enjoyment at all three sites. However, when comparisons were made between intrinsically motivated and hedonically motivated activities, controlling for the level of hedonic enjoyment experienced, the difference between the categories with regard to self-determination was nonsignificant. Based on this evidence, it can be suggested that self-determination should be viewed as a necessary, but not sufficient, condition for intrinsic motivation, when such motivation is considered as entailing both hedonic enjoyment and eudaimonia. It is worth noting that the particular measure of self-determination employed here was adapted from the work of Csikszentmihalyi and differs from the locus of causality focus employed by Deci and Ryan. In future research it would be useful to establish whether parallel findings would be obtained for self-determination when questions based on the Deci and Ryan measure are employed.

When past experiences indicate that particular types of activities are enjoyed, whether in terms of hedonic enjoyment alone or in combination with eudaimonia, those activities are likely to be enacted in the future in anticipation of continued enjoyment. Such activities can be said to be intrinsically motivated, in the original sense used by Deci and Ryan (1985) because it is the pleasure associated with activity itself, rather than extrinsic consideration, that gives rise to its continued performance. However, when activities are required, or when a person feels otherwise constrained to engage in them because of extrinsic considerations, much of that pleasure may be undermined. The presence of psychological reactance (Brehm, 1966), involving a desire to restore lost autonomy (choice), may contribute to this lost enjoyment for activities once experienced with pleasure.

When making conceptual use of the theoretical and empirical distinctions between hedonic enjoyment and eudaimonia, the essential role of self-determination continues to be applicable. Hedonically motivated activities are motivated solely by, and are autonomously chosen because of, the hedonic pleasure with

which they are associated. The introduction of extrinsic considerations or constraints undermines the enjoyment experienced and hence the hedonic motivation for the activities. For intrinsically motivated activities, in the narrower sense proposed here, the motivation for their selection is not only hedonic pleasure, but also eudaimonia, that is, the association of the activity with feelings of self-realization. Consistent with expectations drawn from eudaimonistic identity theory, activities that are intrinsically motivated are not only enjoyed but are also characterized by four variables with links to self-realization: (a) a balance of challenges and skills, (b) perceptions that they entail the development of one's best potentials, (c) the willingness to invest considerable effort in their performance, and (d) the belief that they are important. Like hedonically motivated activities, were intrinsically motivated activities to become required rather than self-selected, the nature of their motivation would be fundamentally changed. Requiring or constraining an activity does not change its association with self-realization, that is, it would still continue to involve a balance of challenges and skills and the same set of potentials would still be present. However, the hedonic enjoyment with which it is experienced would be disrupted, taking with it experiences of eudaimonia. Given that the category of activities that is high on eudaimonia but low on hedonic enjoyment is a theoretical null, and approaches an empirical null, requiring the performance of an activity associated with self-realization may have the effect of moving it from the category for which both hedonic enjoyment and eudaimonia are present to the category for which neither is present.

This observation also helps to explain the counterintuitive finding, replicated here, that self-determination was statistically unrelated to the other predictors of intrinsic motivation, including self-realization values. Although the substantial number of activities in the category involving high levels of both hedonic enjoyment and eudaimonia is consistent with the expectation that people will choose to engage in activities that promote self-realization, it is also true that are many circumstances under which activities entailing those same potentials

will be perceived as required or as performed for extrinsic considerations. Work and education are two domains of activity in which such circumstances are particularly likely to apply (Csikszentmihalyi, 1997) and in the present research respondents listed activities in those domains on the PEAQ-S with considerable frequency.

The data presented here indicate that interest, flow experiences, personal expressiveness, and hedonic enjoyment are all inter-related subjective states. This pattern of findings has implications for the understanding of intrinsic motivation. Hedonic enjoyment in the absence of feelings of personal expressiveness, would constitute evidence that an activity was hedonically motivated, whereas personal expressiveness in conjunction with hedonic enjoyment would be required to conclude that intrinsic motivation was present. For the zero-order correlations interest was more strongly associated with hedonic enjoyment than with eudaimonia, whereas flow experiences showed the opposite pattern, significant for only one of the three sites. However, when intrinsically and hedonically motivated activities were compared directly, controlling for hedonic enjoyment, levels of both interest and flow experiences were significantly higher for intrinsically motivated activities. This is consistent with the view that intrinsically motivated activities are associated with a more complex and differentiated set of subjective experiences than are hedonically motivated activities.

As noted above, within eudaimonistic identity theory (Waterman, 1990), particular significance is attached to personal expressiveness as a criterion for making identity choices. Whereas there are many things a person may enjoy doing in a hedonic sense, for only a subset of those will eudaimonia be experienced. When making life choices, sustained involvement within that subset is likely to prove more durable and more rewarding than the pursuit of activities for which eudaimonia is lacking.

The findings obtained here regarding the distinctions between the eudaimonia and hedonic enjoyment have important implications for operational definitions of intrinsic motivation. In most studies of intrinsic motivation, either of two

approaches has been taken with respect to an operational definition: (a) task continuation beyond that specified by the research conditions, and/or (b) questions pertaining to whether an activity engaged in under various experimental conditions was enjoyed or found to be interesting. However, a task may be continued either because it gives rise to both eudaimonia and hedonic enjoyment or because only hedonic enjoyment is present. Similarly, asking about enjoyment does not afford the opportunity to distinguish between the two conceptions of happiness that may or may not both be present, and asking about interest does so only when controlling for the level of hedonic enjoyment present. A practical implication of the research reported here is that when studying intrinsic motivation, measures of both hedonic enjoyment and personal expressiveness should be employed.

A second area of application concerns interventions directed toward increasing levels of sustained happiness (Lyubomirsky et al., 2005). Techniques designed to increase subjective well-being or the average levels of hedonic enjoyment experienced over time will likely be quite different from those designed to increase average levels of personal expressiveness related to the activities enacted. For example, Schwartz et al. (2005) found that an intervention based on eudaimonistic identity theory promoted the identification of, and engagement in, personally expressive activities. Consistent with this, Sheldon et al. (2002) reported that an intervention to increase goal attainment and well-being was only effective in the presence of a fit between the participants' goals and their interests and values.

As was indicated in the Introduction, the present research was conducted using the activity as the unit of analysis. In future research, the observed distinctions between hedonic enjoyment and eudaimonia can be extended in the direction of studying instances of such experiences and studying individual differences in the extent of such functioning. The use of ESM, incorporating measures for both conceptions of happiness, should permit the identification of contextual variables that distinguish not only what is happening when individuals are happy

and when they are not, but also whether, when happy, they are intrinsically or hedonically motivated. When studying well-being at the level of the individual, attending to the distinctions between the two conceptions of happiness creates the possibility of identifying the developmental antecedents of the differing types of well-being and assessing the consequences that follow from the pursuit of hedonic pleasures alone versus seeking eudaimonic self-realization.

NOTES

¹ Larson and Delespaul (1992) and Scollon et al. (2003) discuss three levels for the analysis of data that could be derived from Experience Sampling Method (ESM): the event, the subject, and the group. The level of the activity, not described by these authors, involves comparisons among different activities aggregated across instances of each type of activity. While ESM data were not collected in the current research, the issue of level of analysis these authors raise is relevant to the methodology applied here.

² The term eudaimonia originated within philosophy and is used here whenever a philosophical reference is intended. It will also be used here whenever the focus is on the contrast of the two conceptions of happiness, that is, hedonic enjoyment and eudaimonia. The term “feelings of personal expressiveness” is intended as a synonym for eudaimonia when the level of analysis is strictly psychological. It was selected because it has wider recognition than does eudaimonia and conveys more about the nature of the subjective experiences present. The scales on the PEAQ-S will be referred to here as measures of hedonic enjoyment and personal expressiveness.

³ In this context, Deci and Ryan (1985) did not explicitly differentiate the subjective states of hedonic enjoyment and eudaimonia.

⁴ Csikszentmihalyi (1975, 1990) uses the term “flow” in two ways: (a) as a label for the condition under which the levels of challenges present for an activity and the level of skills brought to it are both high and (b) as a description of the subjective state present when such a condition is present. In this article the term “balance of challenges and skills” will be used to refer to former condition, whereas the term “flow experiences” will be used to refer to the subjective state.

⁵ The percentage does not approach 100% in part because of the stringent criteria set for labeling an activity as high on personal expressiveness. There were many activities with ratings above the midpoint of the scale that were not included in the category of High on personal expressiveness.

⁶ Given the substantial zero-order correlations among the balance and challenges and skills, self-realization values, and level of effort, and minimal correlations each has with self-determination, the reduced size of the partial

correlations and UVEs for these variables is likely due to the shared involvement in self-realization.

⁷Copies of the full set of ANCOVA tables are available upon request.

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