

Extrinsic Value Orientation and Affective Forecasting: Overestimating the Rewards, Underestimating the Costs

Kennon M. Sheldon, Alexander Gunz, Charles P. Nichols,
and Yuna Ferguson

University of Missouri–Columbia

ABSTRACT We examined affective forecasting errors as a possible explanation of the perennial appeal of extrinsic values and goals. Study 1 found that although people relatively higher in extrinsic (money, fame, image) compared to intrinsic (growth, intimacy, community) value orientation (REVO) are less happy, they nevertheless believe that attaining extrinsic goals offers a strong potential route to happiness. Study 2's longitudinal experimental design randomly assigned participants to pursue either 3 extrinsic or 3 intrinsic goals over 4 weeks, and REVO again predicted stronger forecasts regarding extrinsic goals. However, not even extrinsically oriented participants gained well-being benefits from attaining extrinsic goals, whereas all participants tended to gain in happiness from attaining intrinsic goals. Study 3 showed that the effect of REVO on forecasts is mediated by extrinsic individuals' belief that extrinsic goals will satisfy autonomy and competence needs. It appears that some people overestimate the emotional benefits of achieving extrinsic goals, to their potential detriment.

What kinds of values should people endorse and pursue in order to be happy and healthy? Western culture contains contradictory messages concerning this important question. On the one hand, the search for greater wealth, enhanced popularity, and a more appealing appearance seem to be perennial ways in which Westerners pursue happiness (Kasser & Kanner, 2004). On the other hand, folk

Correspondence concerning this article should be addressed to Ken Sheldon, Psychological Sciences, McAlester Hall, University of Missouri, Columbia Missouri 65211. E-mail: sheldonk@missouri.edu.

Journal of Personality 78:1, February 2010

© 2010, Copyright the Authors

Journal compilation © 2010, Wiley Periodicals, Inc.

DOI: 10.1111/j.1467-6494.2009.00612.x

expressions such as “Money can’t buy you love,” “Fame ain’t what its cracked up to be,” and “Beauty is only skin deep” suggest (as does some contemporary research, reviewed below) that these pursuits will fail. If the latter is true, what accounts for the perennial appeal of “extrinsic” pursuits and values? This article attempts to provide one answer to this question, based on the concept of affective forecasting errors. Below, we provide relevant background for this conjecture.

Values, Value Types, and Well-being

Values orient us toward the world. They influence how we perceive stimuli and incentives in the environment, how we assess the situations and events we experience, and which goals and intentional efforts we choose to pursue from day to day (Feather, 1992; Vroom, 1964). Some theories have attempted to elucidate the major types or dimensions of values, including Rokeach’s ipsative model of 18 terminal values (Rokeach, 1973; Rokeach & Ball-Rokeach, 1989), Schwartz’s (1992, 1994) circumplex model of 10 values, Inglehart’s model distinguishing traditional versus secular/rational and survival versus self-expression dimensions of values (Inglehart & Baker, 2000), the social value orientation model of Kuhlman and Marshall (1975), and others, which specify the major value types (e.g., cooperators, competitors, individualists) associated with peoples’ behavior in social dilemmas.

Notably, none of these researchers has tried to put any *value* on values, that is, to say which ones might be generally more justifiable or beneficial. However in the last 15 years, self-determination theory (SDT) researchers have provided a multidimensional model of values that proposes that some kinds of values are more salubrious than others (Kasser, 2002; Kasser & Ryan, 1993; Sheldon & McGregor, 2000). Specifically, the “intrinsic” values (i.e., community feeling, self-acceptance, and affiliation) are said to more directly satisfy people’s basic psychological needs and foster their growth and thriving, whereas the “extrinsic” values (i.e., financial success, physical attractiveness, and social popularity) are said to be less directly satisfying of needs and growth strivings, tending instead to foster excessive ego involvement and social comparison (Kasser, 2002).

People vary on the relative importance they attach to one versus the other type of value, such that some people give greater weight to

extrinsic values and others to intrinsic values. As anticipated by classic humanistic theory (Fromm, 1976; Maslow, 1971), this variation has been shown to be associated with many different measures of well-being and thriving. Specifically, those with relatively stronger extrinsic values have been shown to be less happy and less well-adjusted compared to those who give greater weight to the intrinsic values, according to both self-report and interview measures of adjustment (Kasser, 2002; Kasser & Ryan, 1993, 1996). This basic pattern has been found within longitudinal studies (Sheldon, 2005; Sheldon & Kasser, 1998; Sheldon, Ryan, Deci, & Kasser, 2004) as well as cross-sectional studies, in people of a wide range of ages (Sheldon & Kasser, 2001; Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004), and in multiple settings (Williams, Cox, Hedberg, & Deci, 2000) and cultures, including both collectivist and individualist cultural samples (Grouzet et al., 2005; Ryan et al., 1999; Schmuck, Kasser, & Ryan, 2000). Furthermore, recent research supports the idea that strong extrinsic values are less satisfying of basic psychological needs (Vansteenkiste, Neyrinck, et al., 2007) and that this helps to account for their problematic effects (Niemiec, Ryan, & Deci, 2009). Thus, it appears that the *content* of people's values may influence their mental health above and beyond the more microlevel (and presumably content-free) cognitive processes underlying the enactment or achievement of those values (Sheldon, 2004).

Supporting the psychometric validity of the extrinsic/intrinsic dimension, Grouzet et al. (2005) used circumplex modeling and found just such a dimension underlying the reports of 1,854 people in 15 cultures regarding 11 different values. Of course, not all values or goals fit into the intrinsic versus extrinsic content dimension; Grouzet et al. (2005) also found a physical self versus self-transcendence dimension in their data, and Schwartz (1992), starting with different value items, found an openness to change versus conservation dimension and a self-enhancement versus self-transcendence dimension across 10 different values. The "aspiration index" measure employed by Kasser and colleagues (Kasser & Ryan, 1993, 1996, 2001) and in the current research focuses on six values shown to be either clearly extrinsic or clearly intrinsic, attempting to locate participants on the bipolar extrinsic/intrinsic value dimension (specific measurement issues will be considered below).

It is also noteworthy that the aspiration index assesses only the content of values and not the motives behind values; thus, it is cer-

tainly possible to pursue a financial success goal for altruistic purposes or a communal group goal for personal gain. However, in terms of their correlates, the “what” (content) and the “why” (motives) of goal pursuits have been shown to be largely independent of one another (Sheldon et al., 2004), and, thus, content is worthy of examination in its own right. Also, it is noteworthy that values concern what one wants, pursues, or thinks important, not what one has or has already attained. Thus, actually being well-off, beautiful, or well known is not necessarily problematic (Howell & Howell, 2008)—instead it is valuing these ends more than one values intrinsic ends that seems symptomatic of an imbalanced and perhaps unhappy individual. Finally, it is worth considering the difference between values and goals. In this research, we assume that the aspiration index measures the dispositional importance people put on various ultimate goods or possible futures and that our goal forecast measures address the specific short-term objectives that might be chosen to approach those ultimate goods or futures. Thus, befitting their location at different levels of an action hierarchy (Carver & Scheier, 1982), we assessed values in terms of the distant future and goals in terms of objectives one might pursue in the next week or two.

Extrinsic Values and Affective Forecasting

Having considered the SDT values model and its findings, we can now ask an important question: If extrinsic values and pursuits are unsatisfying, why do some people spend so much time and energy on them? Doubtless the answer to this question is multifaceted and includes cultural-level factors such as media and advertising; social-level factors such as a person’s current relationships, influences, and life contexts; and individual-level factors such as a person’s developmental history (Kasser, Ryan, Zax, & Sameroff, 1995) and current level of emotional insecurity (Sheldon & Kasser, 2008). However, the current paper focuses on a relatively simple answer: that people with extrinsically oriented values tend to overestimate the positive effects they will obtain from pursuing specific extrinsic goals. Indeed, English literature is full of characters (such as Dickens’s Pip or Scrooge) that initially yearn for wealth, fame, or beauty, believing that these will make them happy, before finally learning (the hard way) what really matters. Stated in terms of the contemporary psychological literature, people with strong extrinsic values may be prone to

making “affective forecasting errors” regarding the expected beneficial effects of pursuing extrinsic goals.

Affective forecasting refers to people’s estimates or expectancies regarding their own emotional states in the future. In the past 10 years it has become clear that people have difficulty predicting their future emotional states, especially in the wake of particular future events and behaviors (Gilbert, 2006; Gilbert, Pinel, Wilson, Blumberg, Wheatley, 1998; Wilson & Gilbert, 2003). This seems to occur because people fixate on a small number of salient factors (focalism; Ayton, Pott, & Elwakili, 2007, Wilson, Wheatley, Meyers, Gilbert, & Axson, 2000), and fail to take into account the many other factors that will also impact them (Wilson & Gilbert, 2003). People also tend to consider the “wrong” factors in making forecasts, such as ultimately inconsequential physical variables that they believe will affect their happiness, and underestimate the influence of interpersonal and social variables that tend to have greater effects on peoples’ well-being (Dunn, Wilson, & Gilbert, 2003). People may also give too much weight to the intensity of current experience in making future predictions, failing to take past experiences adequately into account (Buehler & McFarland, 2001). Finally, they think that the effects of changes, both positive and negative, will be more durable than they actually are (the “durability bias”; Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 2002).

We suggest that one or more of these processes may be at work in leading people with strong extrinsic values to erroneously forecast that extrinsic goal pursuit will lead them to greater happiness, perhaps explaining their overinvestment in such goals. First, extrinsic possible futures may be highly salient and focal, as one imagines one’s stunning new image after getting a cosmetic procedure done, one’s luxurious mansion after the big investment pays off, or one’s celebrity after appearing on *American Idol*. Second, in selecting extrinsic goals people may overemphasize the effect of physical factors (one’s appearance, one’s possessions) and underestimate the effect of social and more intrinsic factors (one’s relationships, one’s peace of mind). Third, extrinsic goal strivers may fail to take past experience into account (“Was I really happier last time after I changed my appearance?”) and fail to consider possible negative repercussions of extrinsic goal pursuit (i.e., having less time for meaningful activities and having to spend more time in annoying or stressful activities). Fourth, extrinsic goal strivers may overestimate the durability of the

positive emotional changes resulting from extrinsic attainments, expecting that the new purchase or hairstyle will have longer-lasting positive effects than it actually does (Lyubomirsky, Sheldon, & Schkade, 2005).

The Current Studies

As discussed above, the extant forecasting literature makes plausible the idea that individuals with strong extrinsic values are prone to make affective forecasting errors regarding specific extrinsic goals. Notably, in these studies we did not directly examine the processes we listed (i.e., durability bias, intensity bias). Instead, our goals were simply to establish that extrinsic individuals make different affective forecasts than intrinsic individuals, to establish that their forecasts really are erroneous, and to explore some possible causes of this error.

STUDY 1

In Study 1 we first measured participants' subjective well-being (SWB) and also their relative extrinsic versus intrinsic value orientation (REVO). We also assessed participants' expectancies (or forecasts) regarding the happiness they would feel after attaining each of six specific goals, three extrinsic and three intrinsic. Affective forecasts were obtained regarding immediate expected happiness and also regarding expected happiness over the longer term (i.e., weeks after having attained the six goals). Thus, we could evaluate one preliminary hypothesis and one primary hypothesis. The preliminary hypothesis was that REVO would be negatively related to current well-being, as in past research (Kasser, 2002). This effect, if found, would suggest that the extrinsic pursuits favored by those high in REVO lead to less happiness than the intrinsic pursuits that might otherwise have been sought. The primary hypothesis was that REVO would be associated with a stronger belief that attaining extrinsic goals will lead to happiness, both immediately and in the longer term. This effect, if found, would perhaps explain why extrinsically oriented people endorse these extrinsic goals in the first place: Their mistaken forecasts lead them to unbalanced priorities in life.

Notably, finding that people believe that the values they strongly endorse will make them happier might seem unsurprising, perhaps

providing mere construct validation. However, reflection suggests that it does not have to be this way. For example, people with more extrinsic values might actually agree with intrinsically oriented people that extrinsic goals are less likely to bring happiness, but they may simply not care about happiness or may pursue extrinsic goals for other reasons besides achieving happiness (e.g., out of a feeling of duty). Thus, we see this primary Study 1 prediction as providing an important “gateway” finding for the rest of this article—establishing that extrinsically oriented people really do believe that their goals will make them happy—so that we can proceed to the second question of assessing whether their beliefs are correct (in Study 2).

Method

Participants and Procedure

Participants were 201 introductory psychology students, 71 men and 126 women (4 did not provide gender information), who participated to help fulfill a course requirement. They attended two laboratory sessions, approximately 4 weeks apart. In the first session they completed well-being measures and also the global value measure, and in the second session they computed the goal-forecast items. Separating the global value measure and the specific goal-forecast measures was important because of the similar content of the items (see below); the temporal separation also eliminated the potential for momentary mood or state variables to influence the relationship between global values and goal-specific forecasts.

Measures

Current subjective well-being (SWB). To assess participants' SWB, we first administered the positive affect negative affect schedule (PANAS; Watson, Clark, & Tellegen, 1988) and the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). As in much past research (Diener, 1994; Sheldon & Elliott, 1999; Sheldon & Niemiec, 2006), we computed a composite SWB variable by summing positive affect and life satisfaction and subtracting negative affect. Coefficient alpha for this measure was .88.

Relative extrinsic value orientation. Participants next completed a 30-item version of the Aspirations Index (A.I.; Kasser & Ryan, 1996), which assesses the three extrinsic values of financial success, attractive appearance, and social recognition, and the three intrinsic values of self-acceptance, community feeling, and affiliation (Sheldon, 2004; Sheldon &

McGregor, 2000). Specifically, they were presented with 30 “aspirations you may have for the future, and, for each item, were asked to “fill in a number which indicates how *important* it is to you that the goal be attained in the future” (see the appendix).

Most past research with the A.I. has used such responses to examine the *relative* degree to which people endorse extrinsic compared to intrinsic values, because this is the quantity proposed by SDT to have deleterious consequences (i.e., endorsing extrinsic values is not problematic unless one endorses them more strongly than intrinsic values). This relative quantity has been represented in a variety of ways. In some research the intrinsic items are first reverse scored and then all of the items are averaged, essentially treating the intrinsic items as negatively keyed indicators of extrinsic valuing (Duriez, Vansteenkiste, Soenens, & De Witt, 2007; Sheldon & McGregor, 2000; Sheldon, Sheldon, & Osbaldiston, 2000). In other research, aggregate intrinsic and extrinsic value scores are first created and then the intrinsic score is subtracted from the extrinsic score, essentially creating a difference score between the two aggregate measures (Duriez, Soenens, & Vansteenkiste, 2007; Sheldon & Kasser, 2008; Vansteenkiste, Duriez, Simons, & Soenens, 2006). Yet another way of treating these responses has been to compute aggregate intrinsic and extrinsic value scores but then to use both scores as simultaneous predictors within regression equations (Kasser & Ryan, 1993, 1996; Williams et al., 2000); by focusing interpretive attention upon the effects of extrinsic valuing controlling for the effects of intrinsic values, researchers again examine the relative strength of one versus the other value. All of these computational methods yield similar effects upon outcome variables, because they all serve to remove a “general valuing” or response extremity factor from the two scores to locate participants along the continuum ranging from strong extrinsic to strong intrinsic values (Williams et al., 2000). Again, this general procedure is justified by the results of Grouzet et al. (2005), who identified a clear extrinsic/intrinsic bipolar dimension underlying the six values used in the current study (see also Duriez, Soenens, et al., 2007).

In the current research, we computed a REVO score by subtracting the 15 intrinsic items ($\alpha = .87$) from the 15 extrinsic items ($\alpha = .93$; α for the difference score = .85). The mean difference score was negative because the mean intrinsic value score was greater than the mean extrinsic value score. Notably, ancillary analyses established that the results were essentially identical if we used the other computational methods discussed above.

Happiness forecasts. Four weeks later, we assessed participants’ beliefs about the emotional effects of attaining extrinsic and intrinsic goals, both in the immediate present and in the longer term. First, participants read

“The next questions ask about the short-term and long-term benefits of achieving certain goals. Imagine you had just made progress on each one of these goals. How much happier would you be *right then*?” They were then presented with the three extrinsic goals of “be physically attractive,” “have many nice things,” and “be admired by others” and the three intrinsic goals of “help those who need it,” “have people I feel very close to,” and “continue to grow as a person.” These six items conform closely to the six subscales of the A.I. and were also employed by Sheldon, Arndt, and Houser-Marko (2003). Participants rated each of the six goals on a 1 (*no difference*) to 3 (*somewhat happier*) to 5 (*much happier*) scale. Next, they read “If you had made progress in each one of these goals, how much happier would you be *after a couple of weeks*?” and made six ratings using the same scale as above. From these 12 ratings we computed four variables representing participants’ forecasts regarding the immediate and longer term benefits of making progress at extrinsic and intrinsic goals. Coefficient alphas for these four measures ranged from .77 to .88.

Results

Table 1 contains the means, standard deviations, and correlations of all study variables, including the extrinsic and intrinsic components of the REVO difference score. There were no gender differences and gender did not interact with our results in any of the studies, so gender is ignored below. As can be seen, our preliminary hypothesis was supported: REVO was negatively associated with concurrent

Table 1
Study 1: Descriptive Statistics and Correlations

	Mean	SD	1	2	3	4	5	6	7
1. REVO	-1.39	0.90							
2. Extrinsic values	2.95	0.83	.84						
3. Intrinsic values	4.35	0.50	-.39	.17					
4. SWB	4.84	1.65	-.16	.04	.34				
5. Ex Forecasts: Now	3.83	0.95	.33	.42	.11	.18			
6. In Forecasts: Now	4.30	0.86	-.08	.10	.31	.44	.57		
7. Ex Forecasts: Later	3.75	1.02	.29	.39	.12	.18	.82	.41	
8. In Forecasts: Later	4.37	0.81	-.08	.16	.39	.47	.49	.86	.49

Note. Correlations greater than .15 are significant at the .05 level. Correlations greater than .18 are significant at the .01 level.

SWB, consistent with past findings and our grounding assumption that in reality, extrinsic pursuits tend to be less beneficial than intrinsic pursuits for obtaining well-being (Kasser, 2002). More importantly, our primary study hypothesis was supported: REVO was positively correlated with forecasts that extrinsic goal attainment would bring both long- and short-term happiness. Apparently, extrinsic individuals believe that attaining extrinsic goals will have greater immediate and lasting positive effects on their mood, compared to intrinsic individuals. Interestingly, however, REVO was associated with neither the short- nor the long-term *intrinsic* forecast variables; apparently there is little difference between extrinsically and intrinsically oriented individuals over their expectations for achieving intrinsic goals.

Brief Discussion

Study 1 provided useful initial information regarding the expectancies that people hold concerning the affective consequences of pursuing different types of goals. First, in a preliminary analysis, we replicated the typical finding that REVO is associated with lower SWB (Kasser, 2002). This supports a basic premise of this article, that overly zealous extrinsic goal pursuit may be an objectively inadvisable route to SWB. Second, we showed that REVO was associated with stronger affective forecasts regarding extrinsic goals: The more extrinsic the person's values, the more they believe that attaining extrinsic goals will be beneficial for their mood, both in the short term and in the longer term. Again, it was important to establish this "gateway" relationship because it could have turned out differently: Extrinsically oriented individuals might have agreed with intrinsically oriented individuals that extrinsic goals are less happiness producing, simply basing their goal preferences on other factors besides expected happiness. Interestingly, REVO was not associated with affective forecasts for intrinsic goals, and thus the only difference between participants high and low in REVO lay in their different beliefs regarding extrinsic goals.

STUDY 2

Study 1 was limited because of its correlational and cross-sectional design. In fact, most past REVO research, even longitudinal

research, has suffered from correlational and self-report limitations (but see Vansteenkiste et al., 2004, and Vansteenkiste, Matos, Lens, & Soenens, 2007, for experimental research on the effects of framing the same goal in extrinsic versus intrinsic terms). For example, Sheldon and Kasser (1998) found that pursuing extrinsic goals is less effective in increasing well-being compared to pursuing intrinsic goals, but their measure of extrinsic goals was dependent on participants' self-reported perceptions of their goals. Stronger evidence for the SDT perspective would be adduced by randomly assigning participants to pursue one or the other type of goal, thereby eliminating self-selection issues and controlling the specific content of the goals to be examined.

Thus, in Study 2 we randomly assigned participants of various value types to pursue either three extrinsic goals or three intrinsic goals over a 4-week period. Study 2 had three major purposes. First, we hoped to conceptually replicate the main Study 1 finding by showing that REVO predicts more positive forecasts in the assigned extrinsic goal condition but not the assigned intrinsic goal condition. This would bolster the earlier findings because the forecast ratings would concern actual self-generated goals that the participant is about to start pursuing, not just the same items used to assess REVO. The longitudinal design also allowed us to examine the later accuracy of these REVO-based forecasting differences.

A second major purpose of Study 2 was to test our grounding assumption that achieving extrinsic goals does not make people happy. Although Study 1 showed cross-sectionally that extrinsic individuals *believe* attaining extrinsic goals will make them happy, it did not provide strong evidence (beyond the negative concurrent association between REVO and SWB) that these participants are objectively *incorrect* in this belief. Again, Sheldon and Kasser (1998) did provide longitudinal evidence that achieving goals linked to extrinsic possible futures does not produce positive change in well-being. However, Sheldon and Kasser's (1998) research did not randomly assign participants to pursue extrinsic or intrinsic goals, raising the issue of self-selection biases. Perhaps it is the circumstances or personality style of people who perceive and rate their goals as extrinsic that explains why such people fail to benefit from goal attainment, rather than the actual goal contents per se.

We hypothesized that we would find a significant interaction between assigned goal type and goal attainment in predicting

longitudinal changes in SWB, such that attainment of assigned intrinsic goals would be associated with greater gains in well-being than would attainment of assigned extrinsic goals. If such an interaction emerges, it would provide the first experimental replication of the longitudinal findings of Sheldon and Kasser (1998) and would constitute a new type of support for their conclusion that pursuing extrinsic goals is not an effective route to happiness.

Study 2's third major purpose was to examine whether people high in REVO gain more from attaining assigned extrinsic goals. Perhaps their dedication to these goals would make it satisfying for them (at least) to attain extrinsic goals, making their forecasts correct after all? Such a REVO \times Condition \times Attainment interaction would be predicted by a straight-forward "matching" hypothesis (Harackiewicz & Sansone, 1991; Pervin, 1968; Vansteenkiste, Timmerman, Lens, Soenens, & Van den Broeck, 2008), according to which individuals benefit from getting experiences that match their personality and dispositions. However, based on self-determination theory's assumption that extrinsic goals are generally less salubrious for everyone (Deci & Ryan, 2000; Vansteenkiste, Timmerman, et al., 2007), we did not expect such a three-way interaction to emerge.

Method

Participants and Procedure

Participants were 64 introductory psychology students at the University of Missouri, 26 men and 38 women, who participated to help fulfill a course requirement. After signing up for the "goal challenge" study, participants attended a laboratory session in which they first completed measures of SWB and also the Aspiration Index to measure REVO. Then they were told: "As part of today's session, we will ask you to complete three simple goals after you leave here today. Each of you will receive different goals—we have chosen your three goals based on an analysis of the on-line pre-test you took a few weeks ago. We believe that these three goals will have a positive effect in your life, if you do them—but whether you do them is up to you, and it is OK if you don't." As this illustrates, we tried to persuade participants that their assigned goals were specially chosen for them, and that the goals might reasonably be expected to provide life benefits, but that the experiment did not demand that they perform the goals. After generating goals to match the categories (either extrinsic or intrinsic; see below), participants completed a manipulation

check to evaluate whether they had generated the expected types of goals. Also, they rated the likely well-being consequences of pursuing their goals. Approximately 2 weeks later, participants were e-mailed a link to an online survey that assessed their current goal progress. Approximately 2 weeks after that, participants were e-mailed a link to an online survey that again assessed their progress and also assessed their final SWB.

Measures

Well-being and values. As in Study 1, SWB was assessed by combining positive affect, life satisfaction, and negative affect (reversed). These measures were administered at both the beginning and end of the study, using 0 (*strongly disagree*) to 9 (*strongly agree*) scales. Coefficient alphas for the two SWB composites were .88 and .91; for our hypothesis tests we computed a SWB difference score by subtracting beginning SWB from final SWB ($\alpha = .87$). In addition, global REVO was measured at Time 1 with the 30-item Aspirations Index, as per Study 1; alpha for the extrinsic values composite was .93 and the intrinsic values composite was .89; alpha for the difference score was .88.

Assigned goals. We chose intrinsic and extrinsic goals to assign to participants based on the conceptual definitions of the constructs and examination of typical items comprising measures of the constructs. The three assigned extrinsic goals were “Find (or work on) a way to get some extra money (i.e., collect a debt somebody owes you, earn some extra money by working more hours, sell something you don’t need),” “Enhance your appearance in some way (i.e., buy a new dress or shirt, change the way you wear your hair, go to a tanning session),” and “Enhance your name recognition or popularity (i.e., create or update a Facebook page, do something to make yourself visible at a party, class, or meeting).” The three assigned intrinsic goals were “Get to know somebody beyond a superficial level (i.e., ask somebody to tell you about themselves, or share something important about yourself to others),” “Identify an appealing new club or group, and go to a meeting (i.e., join a volunteer organization, talk to some people with shared interests),” and “Do something to improve your health (i.e., eat, sleep, or exercise better for the entire week).” Participants wrote down what, specifically, they would try to do in each of their three assigned categories. Thirty participants were assigned to the intrinsic condition and 34 to the extrinsic condition.

Goal rating variables. All goal rating variables employed 0 to 9 scales. To provide a manipulation check, we asked participants to rate the linkages of their three goals to six possible futures, three extrinsic and three

intrinsic. These six futures correspond to the six components of the Aspirations Index. We expected that participants assigned to the extrinsic goal condition would rate their goals as more relevant to extrinsic than to intrinsic possible futures and vice versa for participants assigned to the intrinsic goal condition. To test this, we created a relative extrinsic linkage variable, analogous to the REVO variable, by subtracting the intrinsic ratings from the extrinsic ratings.

To assess SWB-relevant forecasts, we used two items: “What effect do you expect these goals to have on your happiness as a person” and “What effect do you expect these goals to have on your sense of satisfaction in life?” Participants rated each of their three (intrinsic or extrinsic) goals on each item using a 0 (*no positive effect*) to 9 (*extremely positive effect*) scale, and we created a single happiness forecast variable by averaging the six ratings ($\alpha = .82$).

In addition, to assess how well participants actually attained their goals, we measured their level of goal progress both at the halfway mark of the study (i.e., 2 weeks in) and at the end of the study, using a 1 (*not at all*) to 9 (*a great deal*) scale. These six progress ratings were combined to form an aggregate progress variable ($\alpha = .67$).

Results

Table 2 contains descriptive statistics and correlations for the primary study variables, including REVO and also the extrinsic and intrinsic value measures separately. Table 2 also contains point-biserial correlations between condition assignment and the measured

Table 2
Study 2: Descriptive Statistics and Correlations

	Mean	SD	1	2	3	4	5	6
1. REVO	-3.82	1.76						
2. Extrinsic values	4.06	1.56	.89					
3. Intrinsic values	7.88	.80	-.46	.00				
4. Happiness forecasts	5.49	1.96	.22	.31	.12			
5. Goal-Progress	6.11	1.62	.12	.07	-.12	.14		
6. SWB difference	6.62	1.17	.08	.03	-.11	.03	.28	
7. Condition			-.05	-.02	.07	-.10	-.05	-.14

Note. Correlations greater than .22 are significant at the .05 level. Correlations greater than .28 are significant at the .01 level. Condition is coded 0 = *intrinsic goal assigned*, 1 = *extrinsic goal assigned*.

study variables, showing that, as expected, there was no difference between the two conditions on initial values and forecasts or on eventual goal attainment. To assess the efficacy of the between-subjects goal content manipulation, we first conducted a *t* test on the relative extrinsic linkage variable to test for mean differences by extrinsic versus intrinsic condition. Those assigned to the extrinsic condition were significantly higher on this variable ($M = 1.54$ vs. -1.88), $t(62) = 6.76$, $p < .01$, as expected.

Our first hypothesis was that REVO would again predict forecasts regarding extrinsic goals, but not intrinsic goals. Thus we conducted a regression analysis to test for a REVO (centered) \times Assigned Goal Type interaction upon participants' happiness forecasts. In this analysis there was no main effect for goal type, but there was a significant main effect for REVO ($\beta = .33$, $p < .05$), such that more extrinsic participants expected to receive more happiness benefits from participating in the study. This effect was qualified by a significant REVO \times Goal Type interaction, as expected ($\beta = .25$, $p = .05$). Analysis of each condition separately revealed that REVO was not associated with happiness forecasts in the assigned intrinsic goal condition ($\beta = .01$, *ns*), but was associated with happiness forecasts in the assigned extrinsic goal condition ($\beta = .47$, $p < .01$; see Figure 1 for a graphic illustration). Thus, just as in Study 1, participants high and low in REVO disagreed concerning the benefits of extrinsic goal



Figure 1

Study 2: Differential associations of REVO with happiness forecasts in the assigned intrinsic versus extrinsic goals condition. Low versus high REVO was defined as 1 SD above or below the mean.

pursuit, but agreed concerning the benefits of intrinsic goal pursuit. An advantage of Study 2 is that it shows the effect upon ratings of actual goals about to be pursued, not just upon ratings of items taken from the REVO scale.

To test our second and most important hypothesis, that assigned goal type and goal progress would interact to affect changes in SWB, we regressed the difference between final and initial SWB upon goal type (coded 0 = *intrinsic*, 1 = *extrinsic*), goal progress (centered), and a product interaction term. The two-way interaction was significant ($\beta = .41, p < .03$). Specifically, goal progress was positively associated with changes in SWB in the intrinsic condition ($\beta = .58, p < .01$) but not in the extrinsic condition ($\beta = .04, ns$; see Figure 2 for a graphic illustration). This supports our basic premise that forecasts regarding the positive effects of attaining extrinsic goals may often be inaccurate, and also, that this is the first study to replicate the Goal Type \times Goal Attainment interaction upon changes in well-being shown by Sheldon and Kasser (1998) using an experimental study with random assignment. Goal progress had a significant main effect as well in this analysis ($\beta = .29, p < .01$), but goal -type did not ($\beta = .12, ns$).

To test our third hypothesis, that REVO would not moderate this two-way effect, at Step 2 of the equation we entered REVO, a REVO \times Progress product term, a REVO \times Type product term, and, most importantly, a REVO \times Goal Type \times Progress product

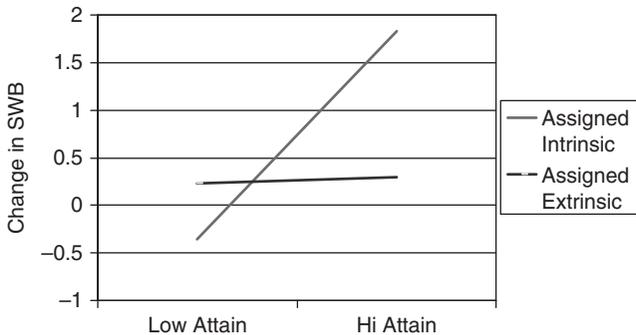


Figure 2

Study 2: Differential associations of goal attainment with actual change in SWB in the assigned intrinsic versus extrinsic goals condition. Low versus high REVO was defined as 1 *SD* above or below the mean.

term (to test the three-way interaction). None of the variables were significant at this second step. This suggests that individuals with strong extrinsic values gain no more than intrinsic individuals from achieving assigned extrinsic goals. Thus, despite their belief that extrinsic goals will lead to happiness, shown in Studies 1 and 2, this belief was not supported by the data.

Brief Discussion

Study 2's experimental design provided stronger support for the idea that extrinsic individuals' affective forecasts regarding extrinsic goals may be incorrect. Participants of varying value orientations were assigned to pursue either three intrinsic or three extrinsic goals for the next 4 weeks and were asked to anticipate what effect pursuing these goals would have on their emotional state 4 weeks later. Thus we were able to evaluate the actual effects of attaining the two different types of goals upon changes in well-being as well as the actual accuracy of initial forecasts regarding such attainment.

Although REVO again predicted stronger forecasts concerning extrinsic but not intrinsic goals, attaining assigned extrinsic goals did not produce changes in well-being, whereas intrinsic goal attainment did. Furthermore, this pattern was not moderated by participants' REVO; in other words, and contrary to what the matching hypothesis would predict, there was no three-way interaction such that extrinsically oriented participants, at least, benefited from extrinsic goal attainment.

STUDY 3

The findings from Study 2 raise this question: Why do extrinsic participants hold their apparently mistaken beliefs concerning the happiness potential of extrinsic goals? In Study 3 we returned to the cross-sectional survey design of Study 1, attempting to glean more information about the beliefs of extrinsically oriented individuals. We considered several possible explanations for this difference. Our study was designed to first replicate the Study 1 and Study 2 association between REVO and extrinsic forecasts and then to find possible mediators of this relationship among participants' ratings of a variety of theoretically relevant constructs. What further beliefs about extrinsic goal pursuit, this study asks, might

account for extrinsic individuals' belief that such pursuits will make them happier?

Our first potential explanation concerned whether extrinsic individuals believe that extrinsic goals have lower potential costs than do intrinsic individuals. As discussed earlier, extrinsic goals can breed excessive ego involvement and social comparison, and pursuing extrinsic goals can require frustrating, boring, or demeaning activities that negatively affect one's vitality, self-esteem, or sense of integrity (Kasser, 2002). Are extrinsic participants less aware of such potential risks? Our second potential explanation concerned whether extrinsic individuals believe that they are better able to tolerate any potential costs in pursuing extrinsic goals. We hypothesized that extrinsic participants might agree that extrinsic goals are risky, yet feel that they can counteract such risks. This might represent a type of egocentric bias. The third potential explanation was that extrinsic individuals believe that extrinsic goals benefit themselves but not other people. Do such participants feel themselves to be "special" in this regard? If so, this may represent another type of egocentric bias. The fourth potential explanation concerned whether extrinsic individuals believe that extrinsic goals are more likely to satisfy the psychological needs that self-determination theory (Deci & Ryan, 2000; Ryan & Deci, in press) posits as essential for all humans: autonomy, competence, and relatedness. In this case, although the beliefs might be mistaken, the goal pursuits themselves might still be viewed as positive adaptation efforts.

Method

Participants and Procedure

Participants were 116 introductory psychology students at the University of Missouri, 37 men and 79 women, who participated to help fulfill a course requirement. After signing up for the study, they were sent a link to an Internet survey. This survey first assessed REVO, then assessed participants' forecasts concerning extrinsic goals, then assessed a number of other beliefs concerning extrinsic goals.

Measures

Measures repeated from earlier studies. To assess REVO we again used the version of the Aspirations Index employed in Studies 1 and 2 (extrinsic $\alpha = .94$, intrinsic $\alpha = .91$, REVO $\alpha = .89$). To assess happiness

forecasts regarding extrinsic goals, we used the same three extrinsic goal stems as in the first two studies (regarding financial success, attractive appearance, and fame/popularity), asking “Imagine you have just achieved each one of these goals. How much happier would you be right then?” A 0 (*no difference*) to 9 (*much happier*) scale was employed, and we averaged across the three goals ($\alpha = .84$).

New measures. To assess the possibility that extrinsic participants believe they will benefit more than others from extrinsic goals, we asked participants to make the same ratings as above for the item “Imagine that the average person has just achieved each one of these goals. How much happier would they be right then?” using the same scale ($\alpha = .76$). Thus, we could compare happiness forecasts for the self and for the average other. To assess the perception of risk in pursuing extrinsic goals, we used the following item: “All goals may come with negative consequences. For example, if you achieved the goal of being physically attractive, you may also get unwanted attention from others. However, some goals may result in greater negative consequences than other goals. To what extent do you think that the following goals will lead to negative consequences?” We averaged across the three ratings to derive a “perceived risk” variable ($\alpha = .72$). To assess the perception of being immune to risk, we used the following item: “Although goals may come with negative consequences some people do not experience these negative consequences, or can prevent them. How difficult would it be for YOU in handling the potential negative consequences associated with each goal?” After reverse scoring, we averaged across the three ratings to derive a “perceived ability to handle risk” variable ($\alpha = .84$).

To assess the perception that extrinsic goals result in psychological need satisfaction, we used the following stem: “Pursuing and achieving different kinds of goals provides different kinds of experiences.” To assess competence, this sentence was followed by “Please rate whether each goal listed below provides experiences of competence in life; i.e., if you attained these goals, would you feel like an intelligent or successful person?” To assess relatedness, the first sentence was followed by “Please rate whether each goal listed below provides experiences of relatedness in life. I.e., if you attained these goals, would you feel connected or closer to other people?” To assess autonomy, the first sentence was followed by “Please rate whether each goal listed below provides experiences of autonomy in life; i.e., if you attained this goal, would you feel freer and more self-expressive?” We averaged across the three goals for each perceived need satisfaction variable (competence $\alpha = .81$, relatedness $\alpha = .80$, autonomy $\alpha = .74$).

Results

Table 3 contains the means, standard deviations, and correlations for all variables, including the extrinsic and intrinsic value scales considered separately. As can be seen, REVO was positively correlated with well-being forecasts concerning the effects of extrinsic goals upon the self ($r = .59$), replicating the results of Studies 1 and 2. In addition, REVO was positively correlated with forecasts concerning the effects of extrinsic goals upon the average other person ($r = .43$). Notably, the latter correlation was significantly weaker than the former, $t(114) = 2.36$, $p < .05$, suggesting that extrinsically oriented persons believe that extrinsic attainment will have somewhat more beneficial effects for themselves, compared to others. REVO was also negatively correlated with the belief that extrinsic goals are risky, positively correlated with the belief that one can handle any risks, and positively correlated with the belief that extrinsic goals provide experiences of autonomy, competence, and relatedness. Thus, the stage was set for the mediational tests described earlier, in which we attempted to account for the association of REVO with positive forecasts regarding extrinsic goals.

In our first mediational analysis, we regressed forecasts for the self upon REVO at Step 1 and then entered the “potential risk” and “ability to handle risk” variables at Step 2 to evaluate whether the Step 1 effect was weakened. However, neither of the two Step 2 variables was significant with REVO controlled, indicating that they cannot account for the primary association. Thus, participants high in REVO do not expect greater benefits from extrinsic goals due to differential perceptions of the risks of such goals.

In our second mediational analysis, we regressed extrinsic forecasts upon REVO at Step 1 and then entered a difference score at Step 2 representing the greater expected benefit of extrinsic goals for self compared to the average other. At Step 2 of the analysis the Step 1 effect was reduced from .59 to .39, and the difference score coefficient was .58 ($p < .01$). Application of Sobel’s (1982) test revealed that significant partial mediation was in evidence ($z = 3.68$, $p < .01$). Thus, it appears that one reason extrinsic individuals expect greater happiness benefits from extrinsic goals is that they are different from other people, perhaps representing an egocentric bias.

In our third mediational analysis, we regressed forecasts for the self upon REVO at Step 1, and then entered the expected autonomy,

Table 3
Study 3: Descriptive Statistics and Correlations

	Mean	SD	1	2	3	4	5	6	7	8	9
1. REVO	-2.84	1.85									
2. Extrinsic values	5.08	1.74	.86								
3. Intrinsic values	7.98	0.97	-.37	.17							
4. Ex Forecasts for Self	6.45	2.08	.60	.63	.00						
5. Ex Forecasts for Others	7.20	1.48	.44	.51	.09	.61					
6. Riskiness of Ex Goals	5.45	1.78	-.23	-.12	.22	-.09	-.07				
7. Ability to Handle Risks	6.20	1.81	.29	.36	.09	.26	.25	-.24			
8. Ex Goals → Autonomy	5.46	1.72	.30	.40	.15	.52	.47	.06	.25		
9. Ex Goals → Competence	5.38	2.22	.52	.56	.02	.61	.49	-.07	.21	.56	
10. Ex Goals → Relatedness	5.27	2.16	.51	.56	.04	.58	.52	-.15	.21	.57	.61

Note. Correlations greater than .19 are significant at the .05 level. Correlations greater than .23 are significant at the .01 level.

competence, and relatedness effect variables at Step 2 to evaluate whether the Step 1 effect was weakened. At Step 2 of this analysis the Step 1 effect was reduced from .59 to .35, and autonomy and competence were themselves significant (both β s = .22, $ps < .01$ and $.05$, respectively); relatedness was not significant ($\beta = .11$, ns). Application of Sobel's (1982) test revealed that significant mediation was in evidence for autonomy ($z = 2.12$, $p < .05$) and competence ($z = 2.00$, $p < .05$), but not for relatedness ($z = 1.08$, ns). Thus, it appears that extrinsically oriented participants' beliefs that extrinsic goals are salubrious for their happiness are at least in part underlain by a belief that they will feel autonomous and competent as a result of obtaining those goals and less so by a belief that they will feel related to others as a result of obtaining them.

Brief Discussion

Study 3 again replicated the earlier finding that those high in REVO expect that achieving extrinsic goals will lead to greater happiness and also extended the finding by showing that the effect is partially mediated by the belief that they will feel especially competent (intelligent and successful) and autonomous (free and self-determining) as a result of attaining such goals. In addition, the effect is partially mediated by extrinsically oriented participants' belief that they will benefit more from those goals than will other people. Although those high in REVO also believed that extrinsic goals have fewer negative side effects in general and that they are more able to handle whatever side effects arise, these beliefs could not help account for the association of REVO with extrinsic forecasts.

Together, this pattern of results suggests that the positive forecasts of those high in REVO are primarily rooted in optimism regarding the positive effects of extrinsic goals (particularly for the self), rather than in optimism regarding the limited negative effects of such goals. It also suggests that extrinsic participants may be attempting to meet important agentic needs via their goal selections, although they may be misguided in their chosen routes.

GENERAL DISCUSSION

These three studies explored the intersection of affective forecasting and extrinsic value orientation, attempting to understand the peren-

nial appeal of extrinsic goals despite both folk wisdom and research evidence suggesting they often backfire or fail to satisfy. In Study 1, participants higher in REVO were more likely to believe that extrinsic goals lead to emotional well-being, despite being lower in current SWB compared to more intrinsically oriented participants. Study 2's experimental/longitudinal design first replicated the Study 1 forecasting difference, in that those high in REVO who were assigned to the extrinsic goal condition expected to achieve more benefits from those goals, whereas there was no such effect in the assigned intrinsic goal condition. More significantly, Study 2 showed that these beliefs are indeed erroneous, in that participants who were randomly assigned to pursue extrinsic goals did not actually benefit from attaining them, even if they were high in REVO. This study was important in supplying the first experimental test of an important SDT claim, using a longitudinal study of changes in SWB in which goals were randomly assigned, rather than merely assessed by self-report. Study 2 was also important in showing that a "matching" perspective does not apply in this particular domain: More extrinsic participants were not made happier by achieving goals that matched their values, despite their belief that they would be.

Study 3 replicated the Study 1 finding that extrinsic participants forecast more happiness from achieving extrinsic goals and found that it was partially mediated by beliefs that extrinsic goals will fulfill one's autonomy and competence needs and also by beliefs that extrinsic goals will benefit the self more than they would other people (a belief clearly shown to be wrong in these data). Together, these results convincingly demonstrate that extrinsically oriented individuals overestimate the positive effects of achieving extrinsic goals. We next consider some issues and questions arising from these findings.

One set of questions concerns individuals who strongly endorse extrinsic values, that is, those high in REVO. Again, such individuals tend to be lower in SWB, presumably because of the frustrations and lack of satisfaction that have resulted since they first came to endorse this set of values. But which comes first, unhappiness or extrinsic value endorsement? Extrinsic individuals' lower SWB may reflect the personal and developmental difficulties that preceded and initially contributed to the development of their extrinsic value profiles. Indeed, Kasser (2002) argued that a problematic childhood (controlling parents, insecure neighborhood), taken in combination with ubiquitous media and advertising claims that extrinsic goals can

provide missing security and self-esteem, together tend to produce extrinsically oriented adults (Kasser et al., 1995; Kasser, Koestner, & Lekes, 2002).

Putting aside this chicken-and-egg question, why do extrinsically oriented adults persist in doing that which does not appear to be giving them happiness and probably will not provide happiness in the future? Again, one possibility is that strongly extrinsic individuals are simply not interested in happiness but, instead, hold other ideals paramount (Lyubomirsky, 2001). However, the current data suggest that expected happiness is indeed part of the equation; those who endorsed extrinsic values as personally important also thought extrinsic goals will lead to greater need satisfaction and well-being. Thus, the problem may instead be that extrinsic individuals do not realize that extrinsic goals are ineffective at producing happiness or feel that such goals will be ineffective for other people but not for them. Indeed, the results of these studies support both of these ideas, as well as suggesting that extrinsic individuals believe that attaining such goals will help them to meet needs such as feeling competent, effective, and in control of their life. Taken together, these results paint a portrait of the typical extrinsically oriented individual as someone who is striving in earnest for the same ultimate ends as more intrinsically oriented people—agency and happiness—but who is working from a different, and possibly faulty, lay theory about which pursuits will best deliver those ends. Possible sources of extrinsic individuals' apparently misguided lay theories of happiness include developmental and current emotional difficulties, media and advertising processes, social comparison processes, and peer group processes (Kasser & Kanner, 2004).

Study limitations include the fact that all data were self-reported, the fact that all participants came from the Midwestern region of the United States, and the fact that most participants were Caucasian. Future studies should rectify these deficiencies (e.g., by assessing the forecasts and values of those from collectivist countries or by assessing values and/or SWB via informant report). Future research might also attempt to experimentally provide small “extrinsic” and “intrinsic” experiences in the laboratory, to examine their forecasted and actual effect upon the mood of people of different value types (see Dunn, Aknin, & Norton, 2008). For example, although money and status seekers might expect a sudden monetary gift to generate boosted mood, those who actually receive such a gift might instead

report feeling resentment at feeling indebted to the giver or envy regarding the possibility that other study participants may have received even more. In addition, future research should examine some of the specific mechanisms identified by previous affective forecasting research to ascertain their relevance for understanding goal selection. Which processes, if any, might help to explain extrinsic choices: the durability bias (Gilbert et al., 2002), the intensity bias (Buehler & McFarland, 2001), focalism (Wilson et al., 2000), or the tendency to overweight physical versus social factors (Dunn et al., 2003)? The current research was designed primarily to establish the extrinsic forecasting error effect in the first place, rather than to delineate the specific cognitive processes that underlie it.

As a final note, it should be acknowledged that extrinsic goals are not “evil” and certainly have their time and place. It is well known in the SWB literature that income and material resources have a substantial effect upon SWB up to a point of comfortable subsistence, after which the effect levels off (Myers, 2000). Thus, forecasts regarding the affective consequences of attaining extrinsic goals may be correct after all, *if* the person is in an impoverished state. Or, to consider a second extrinsic value, a person with a severe physical injury or congenital birth defect may gain much affective benefit from surgery to improve their image/appearance. Although there are doubtless specific cases in which pursuing strongly extrinsic goals makes sense, in the current college samples, we believe that most individuals already experience adequate levels of subsistence and appearance. Strong extrinsic (relative to intrinsic) goal pursuit may often be weighed with more costs than benefits, and thus may backfire or fail to satisfy.

CONCLUSION

These studies add to the affective forecasting literature by showing a potentially important moderator of forecast accuracy: the content (intrinsic vs. extrinsic) of the event or goal whose effects are being forecast. In contrast to the typical conclusion that people are simply bad at forecasting their later state (Wilson & Gilbert, 2003), it appears that people may be fairly good at such forecasts when they involve achieving an intrinsic goal. These studies also add to the extrinsic values literature by supplying a new potential explanation for

the appeal of extrinsic pursuits, namely, peoples' overestimates of their likely benefits. Finally, these studies provide new information relevant to current cultural debates concerning happiness, materialism, and sustainability. If extrinsically oriented persons can be convinced that their goals and objectives really will not produce happiness, despite their beliefs to the contrary, this might produce benefits not only for them but also for society.

REFERENCES

- Ayton, P., Pott, A., & Elwakili, N. (2007). Affective forecasting: Why can't people predict their emotions? *Thinking and Reasoning*, *13*, 62–80.
- Buehler, R., & McFarland, C. (2001). Intensity bias in affective forecasting: The role of temporal focus. *Personality and Social Psychology Bulletin*, *27*, 1480–1493.
- Carver, C. S., & Scheier, M. F. (1982). Control theory: A useful conceptual framework for personality-social, clinical, and health psychology. *Psychological Bulletin*, *92*, 111–135.
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, *11*, 227–268.
- Diener, E. (1994). Assessing subjective well-being: Progress and opportunities. *Social Indicators Research*, *31*, 103–157.
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life scale. *Journal of Personality Assessment*, *49*, 71–75.
- Dunn, E. W., Aknin, L., & Norton, M. I. (2008). Spending money on others promotes happiness. *Science*, *319*, 1687–1688.
- Dunn, E. W., Wilson, T. D., & Gilbert, D. T. (2003). Location, location, location: The misprediction of satisfaction in housing lotteries. *Personality and Social Psychology Bulletin*, *29*, 1421–1432.
- Duriez, B., Soenens, B., & Vansteenkiste, M. (2007). In search of the antecedents of adolescent authoritarianism: The relative contribution of parental goal promotion and parenting style dimensions. *European Journal of Personality*, *21*, 507–527.
- Duriez, B., Vansteenkiste, M., Soenens, B., & De Witte, H. (2007). The social costs of extrinsic relative to intrinsic goal pursuits: Their relation with social dominance and racial and ethnic prejudice. *Journal of Personality*, *75*, 757–782.
- Feather, N. T. (1992). Values, valences, expectations, and actions. *Journal of Social Issues*, *48*, 109–124.
- Fromm, E. (1976). *To have or to be*. New York: Harper & Row.
- Gilbert, D. T. (2006). *Stumbling on happiness*. New York: Knopf.
- Gilbert, D. T., Pinel, E. C., Wilson, T. D., Blumberg, S. J., & Wheatley, T. P. (1998). Immune neglect: A source of durability bias in affective forecasting. *Journal of Personality and Social Psychology*, *75*, 617–638.

- Gilbert, D. T., Pinel, E. C., Wilson, T. D., Blumberg, S. J., & Wheatley, T. P. (2002). Durability bias in affective forecasting. In T. Gilovich, D. Griffin, & D. Kahneman (Eds.), *Heuristics and biases: The psychology of intuitive judgment* (pp. 292–312). New York: Cambridge University Press.
- Grouzet, F. M. E., Kasser, T., Ahuvia, A., Dols, J. M. F., Kim, Y., Lau, S., et al. (2005). The structure of goal contents across 15 cultures. *Journal of Personality and Social Psychology*, **89**, 800–816.
- Harackiewicz, J. M., & Sansone, C. (1991). Goals and intrinsic motivation: You can get there from here. In M. L. Maehr & P. R. Pintrich (Eds.), *Advances in motivation and achievement* (Vol. 7, pp. 21–49). Greenwich, CT: JAI.
- Howell, R. T., & Howell, C. J. (2008). The relation of economic status to subjective well-being in developing countries: A meta-analysis. *Psychological Bulletin*, **134**, 536–560.
- Inglehart, R., & Baker, W. E. (2000). Modernization, cultural change, and the persistence of traditional values. *American Sociological Review*, **65**, 19–51.
- Kasser, T. (2002). *The high price of materialism*. Cambridge, MA: MIT Press.
- Kasser, T., & Kanner, A. D. (2004). Where is the psychology of consumer culture? In T. Kasser & A. D. Kanner (Eds.), *Psychology and consumer culture: The struggle for a good life in a materialistic world* (pp. 3–7). Washington, DC: American Psychological Association.
- Kasser, T., Koestner, R., & Lekes, N. (2002). Early family experiences and adult values: A 26-year, prospective longitudinal study. *Personality and Social Psychology Bulletin*, **28**, 826–835.
- Kasser, T., & Ryan, R. M. (1993). A dark side of the American dream: Correlates of financial success as a central life aspiration. *Journal of Personality and Social Psychology*, **65**, 410–422.
- Kasser, T., & Ryan, R. M. (1996). Further examining the American dream: Differential correlates of intrinsic and extrinsic goals. *Personality and Social Psychology Bulletin*, **22**, 280–287.
- Kasser, T., & Ryan, R. M. (2001). Be careful what you wish for: Optimal functioning and the relative attainment of intrinsic and extrinsic goals. In P. Schmuck & K. M. Sheldon (Eds.), *Life goals and well-being: Towards a positive psychology of human striving* (pp. 116–131). Ashland, OH: Hogrefe & Huber Publishers.
- Kasser, T., Ryan, R. M., Zax, M., & Sameroff, A. J. (1995). The relations of maternal and social environments to late adolescents' materialistic and prosocial values. *Developmental Psychology*, **31**, 907–914.
- Kuhlman, D. M., & Marshello, A. F. (1975). Individual differences in game motivation as moderators of preprogrammed strategy effects in prisoner's dilemma. *Journal of Personality and Social Psychology*, **32**, 922–931.
- Lyubomirsky, S. (2001). Why are some people happier than others? The role of cognitive and motivational processes in well-being. *American Psychologist*, **56**, 239–249.
- Lyubomirsky, S., Sheldon, K. M., & Schkade, D. (2005). Pursuing happiness: The architecture of sustainable change. *Review of General Psychology*, **9**, 111–131.
- Maslow, A. (1971). *The farther reaches of human nature*. New York: Viking Press.

- Myers, D. G. (2000). The funds, friends, and faith of happy people. *American Psychologist*, *55*, 56–67.
- Niemiec, C. P., Ryan, R. M., & Deci, E. L. (2009). The path taken: Consequences of attaining intrinsic and extrinsic aspirations in post-college life. *Journal of Research in Personality*, *34*, 75–91.
- Pervin, L. (1968). Performance and satisfaction as a function of individual-environment fit. *Psychological Bulletin*, *59*, 56–68.
- Rokeach, M. (1973). *The nature of human values*. New York: Free Press.
- Rokeach, M., & Ball-Rokeach, S. J. (1989). Stability and change in American value priorities, 1968–1981. *American Psychologist*, *44*, 775–784.
- Ryan, R. M., Chirkov, V. I., Little, T. D., Sheldon, K. M., Timoshina, E., & Deci, E. L. (1999). The American dream in Russia: Extrinsic aspirations and well-being in two cultures. *Personality and Social Psychology Bulletin*, *25*, 1509–1524.
- Ryan, R. M., & Deci, E. L. (2008). Self-determination theory and the role of basic psychological needs in personality and the organization of behavior. In O. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality psychology: Theory and research* (3rd ed., pp. 654–678). New York: Guilford Press.
- Schmuck, P., Kasser, T., & Ryan, R. M. (2000). Intrinsic and extrinsic goals: Their structure and relationship to well-being in German and U. S. college students. *Social Indicators Research*, *50*, 225–241.
- Schwartz, S. H. (1992). Universals in the content and structure of values: Theory and empirical tests in 20 countries. In M. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 25, pp. 1–65). New York: Academic Press.
- Schwartz, S. H. (1994). Are there universal aspects in the content and structure of values? *Journal of Social Issues*, *50*, 19–45.
- Sheldon, K. M. (2004). *Optimal human being: An integrated multi-level perspective*. Mahwah, NJ: Erlbaum.
- Sheldon, K. M. (2005). Positive value change during college: Normative trends and individual differences. *Journal of Research in Personality*, *39*, 209–223.
- Sheldon, K. M., Arndt, J., & Houser-Marko, L. (2003). In search of the organismic valuing process: The human tendency to move towards beneficial goal choices. *Journal of Personality*, *71*, 835–869.
- Sheldon, K. M., & Elliot, A. J. (1999). Goal striving, need satisfaction, and longitudinal well-being: The self-concordance model. *Journal of Personality and Social Psychology*, *76*, 482–497.
- Sheldon, K. M., & Kasser, T. (1998). Pursuing personal goals: Skills enable progress, but not all progress is beneficial. *Personality and Social Psychology Bulletin*, *24*, 1319–1331.
- Sheldon, K. M., & Kasser, T. (2001). Getting older, getting better? Personal strivings and psychological maturity across the life span. *Developmental Psychology*, *37*, 491–501.
- Sheldon, K. M., & Kasser, T. (2008). Psychological threat and extrinsic goal striving. *Motivation and Emotion*, *32*, 37–45.
- Sheldon, K. M., & McGregor, H. (2000). Extrinsic value orientation and the “tragedy of the commons.” *Journal of Personality*, *68*, 383–411.

- Sheldon, K. M., & Niemiec, C. P. (2006). It's not just the amount that counts: Balanced need satisfaction also affects well-being. *Journal of Personality and Social Psychology*, **91**, 331–341.
- Sheldon, K. M., Ryan, R. M., Deci, E. L., & Kasser, T. (2004). The independent effects of goal contents and motives on well-being: It's both what you pursue and why you pursue it. *Personality and Social Psychology Bulletin*, **30**, 475–486.
- Sheldon, K. M., Sheldon, M. S., & Osbaldiston, R. (2000). Prosocial values and group-assortation within an N-person prisoner's dilemma. *Human Nature*, **11**, 387–404.
- Sobel, M. E. (1982). Asymptotic intervals for indirect effects in structural equations models. In S. Leinhardt (Ed.), *Sociological methodology 1982* (pp. 290–312). San Francisco: Jossey-Bass.
- Vansteenkiste, M., Duriez, B., Simons, J., & Soenens, B. (2006). Materialistic values and well-being among business students: Further evidence for their detrimental effect. *Journal of Applied Social Psychology*, **36**, 2892–2908.
- Vansteenkiste, M., Matos, L., Lens, W., & Soenens, B. (2007). Understanding the impact of intrinsic versus extrinsic goal framing on exercise performance: The conflicting role of task and ego involvement. *Psychology of Sport and Exercise*, **8**, 771–794.
- Vansteenkiste, M., Neyrinck, B., Niemiec, C. P., Soenens, B., De Witte, H., & Van den Broeck, A. (2007). On the relations among work value orientations, psychological need satisfaction, and job outcomes: A self-determination theory approach. *Journal of Occupational and Organizational Psychology*, **80**, 251–277.
- Vansteenkiste, M., Simons, J., Lens, W., Sheldon, K. M., & Deci, E. L. (2004). Motivating learning, performance, and persistence: The synergistic effects of intrinsic goal contents and autonomy-supportive contexts. *Journal of Personality and Social Psychology*, **87**, 246–260.
- Vansteenkiste, M., Timmerman, T., Lens, W., Soenens, B., & Van den Broeck, A. (2008). Does extrinsic goal-framing enhance extrinsic individuals' learning and performance? An experimental test of the match perspective versus self-determination theory. *Journal of Educational Psychology*, **100**, 387–397.
- Vroom, V. H. (1964). *Work and motivation*. New York: Wiley.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, **54**, 1063–1070.
- Williams, G. C., Cox, E. M., Hedberg, V. A., & Deci, E. L. (2000). Extrinsic life goals and health-risk behaviors in adolescents. *Journal of Applied Social Psychology*, **30**, 1756–1771.
- Wilson, T. D., & Gilbert, D. T. (2003). Affective forecasting. In M. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 35, pp. 345–411). New York: Elsevier.
- Wilson, T. D., Wheatley, T. P., Meyers, J. M., Gilbert, D. T., & Axsom, D. (2000). Focalism: A source of durability bias in affective forecasting. *Journal of Personality and Social Psychology*, **78**, 821–836.

APPENDIX

Items included in this version of the Aspirations Index include the following (I = intrinsic value item, E = extrinsic value item): How important is it that in the future, . . .

1. I will choose what I do, instead of being pushed along by life. (I)
2. I will feel that there are people who really love me, and whom I love. (I)
3. I will assist people who need it, asking nothing in return. (I)
4. I will be recognized by lots of different people. (E)
5. I will successfully hide the signs of aging. (E)
6. I will be financially successful. (E)
7. At the end of my life, I will look back on my life as meaningful and complete. (I)
8. I will have good friends that I can count on. (I)
9. I will work for the betterment of society. (I)
10. My name will be known by many people. (E)
11. I will have people comment often about how attractive I look. (E)
12. I will have a job that pays very well. (E)
13. I will gain increasing insight into why I do the things I do. (I)
14. I will share my life with someone I love. (I)
15. I will work to make the world a better place. (I)
16. I will be admired by many people. (E)
17. I will keep up with fashions in hair and clothing. (E)
18. I will have many expensive possessions. (E)
19. I will know and accept who I really am. (I)
20. I will have committed, intimate relationships. (I)
21. I will help others improve their lives. (I)
22. I will be famous. (E)
23. I will achieve the “look” I’ve been after. (E)
24. I will be rich. (E)
25. I will continue to grow and learn new things. (I)
26. I will have deep, enduring relationships. (I)
27. I will help people in need. (I)
28. My name will appear frequently in the media. (E)
29. My image will be one others find appealing. (E)
30. I will have enough money to buy everything I want. (E)