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CHAPTER 4

THE ENDOWMENT- CONTRAST MODEL: A LENS FOR HAPPINESS RESEARCH

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In this chapter we review the Endowment-Contrast (E-C) framework for assessing well-being (Tversky & Griffin, 1991), examine extensions and applications, and apply it to new empirical approaches to well-being research. The E-C model is a set of tools to use in thinking about—and measuring—happiness and well-being. The framework fits firmly in the “social constructionist” perspective on well-being, focusing as it does on the cognitive aggregation of hedonic impact over time and the distinction between objective circumstances and subjective value. We first review the historical context in which the framework was developed, describe the fundamental building blocks of the theory, and illustrate selected developments and applications. We then describe the generalization of the original framework and its application to the choice-judgment discrepancy, and close with a discussion of the relevance of the framework to new distinctions in the measurement of well-being.

THE HISTORICAL CONTEXT: HEDONIC PSYCHOLOGY IN THE 1980S

The development of the E-C framework was motivated primarily by a reaction against some of the prevailing ideas of the time. One influential idea was the notion, associated with the work of Parducci (1984) on range-frequency theory, that intense pleasures should be restricted or avoided to prevent a contrast effect such that small daily pleasures become experienced as neutral or even disappointing. In the Parduccian view, intense but rare pleasures provide full value in the experience and do not chip away at the value of small pleasures. Thus, a

fabulous honeymoon trip might add to life satisfaction because of the one-time pleasure without serving as a daily standard of comparison that reduces the pleasure of neighborhood walks with one's spouse. However, a regular round of cruises and luxury vacations might become both dull and leave daily life feeling especially flat. A second widely shared viewpoint was that the deliberate pursuit of happiness is doomed to failure because of the "hedonic treadmill" (Brickman & Campbell, 1971) caused by changing adaptation levels (Helson, 1964). Why strive for a life of peak pleasures when lottery winners seemed to revert back to average levels of satisfaction and citizens of rich nations seemed hardly happier than those of poor nations? Related to this was the everyday observation that the same economic or social stimulus that led to despair in one person left another person's well-being untouched. How could a prescriptive approach to maximizing well-being have any currency given the observed variability in response to bad and good life events?

A third contributor to the zeitgeist of well-being research in the late 1980s and early 1990s was the frustration with the uncertain epistemological status of verbal reports of well-being, happiness, and life satisfaction. What if the lottery winner was truly happier, but used different language—language responsive to adaptation effects—to express those feelings? Perhaps neuroscience would come to the rescue and provide a gold standard measure of true happiness; or perhaps asking people for willingness to pay for different states of life or health would overcome such a deep and apparently unsolvable problem.

A fourth important element of this intellectual period was that happiness and well-being were entering the mainstream of social science, in the sense that researchers from public policy, law, health, and economics were all joining psychologists and sociologists in searching for what made people less miserable, and in some cases, for what made people happy. Even at that time, a minority of economists (in particular, Easterlin, 1974) were sufficiently convinced by survey evidence on self-reported well-being to propose relativistic theories adapted from psychology that focused on adaptation and satisfaction. However, mainstream economics brought with it two fundamental canons of belief: more money was preferable to less money (in happiness, health, and marital partners), and the proper measure of utility was choice. Who knew what people meant by reports of happiness, satisfaction, or well-being? Who knew if people had the insight to reflect on what was good for them? What mattered was action, behavior, and observed commitment to one state of the world over another.

The E-C model was developed as a counter-argument to these prevailing ideas, but its own brand of constructionism was also powerfully shaped by three more immediate methodological influences. The first of these was Amos Tversky's trademark use of simple formal models to turn a complex and messy problem into a sharp, testable analysis. We develop this further through detailed examination later in this chapter.

A second immediate influence was the work Tversky was carrying out at that time with Kahneman, Slovic, and others on contingent models of judgment (Slovic, Griffin, & Tversky, 1990; Tversky, Sattath, & Slovic, 1988; Tversky, Slovic, & Kahneman, 1990). These models explained the causes and implications of preference reversals, where people would choose A over B, but be willing to pay more money for B than A. These were "contingent" models of judgment and choice because the specific information that the decision-maker noticed and used was contingent or conditional on the method of elicitation of preferences (e.g., rating or pricing or choice or elimination of alternatives). In particular, different methods of elicitation focused the decision-maker on different aspects of the options under consideration,

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or on different ways to justify choice, or made different aspects of the options easier to compute and therefore weighted more heavily in the revealed preference.

A third major influence that shaped the E-C model was the contemporary work of Fritz Strack and Nobert Schwarz on experiential versus cognitive effects on reported well-being, which was to some extent a social psychological analogue to the contingent judgment perspective. This line of work demonstrated that seemingly trivial manipulations such as spending time in an unpleasant room, or even answering a question about the frequency of recent dating experiences, could change the frame of reference by which life satisfaction was judged. Like models of contingent judgments, the work by Strack, Schwarz, and colleagues implied that answers to well-being questions in survey format were inextricably constructionist in that answers were sensitive to the way that target and surrounding questions were asked, the moods they aroused, and the memories they brought to mind (e.g., Strack, Schwarz, & Gschneidinger, 1985). In other words, there seemed to be no single right answer to the question of how happy a person was: their true happiness—as measured by their response to a specific question at a specific time—“truly” did depend on the accessibility of memories and emotions, and the integration and interpretation of those accessible building blocks.

ENDOWMENT AND CONTRAST: A PERSONAL HISTORY

The fundamental insight underlying the endowment and contrast model emerged after many hours of talking about happiness and satisfaction; in particular about whether peak experiences today necessarily led to reduced pleasure in the future. What of that great dinner in New York at a conference? What of reading a fantastic book or seeing a great movie? What of a honeymoon trip to southern Spain? The insight, presented on Tversky's small whiteboard in his office, was simply represented as $Sat_2 = E_2 + E_1 - C_1$. Satisfaction at the time of Event 2 (a French dinner in one's home town) is a function of the (positive) Endowment yielded by the second dinner plus the Endowment yielded (through memory) of the positive experience of the first dinner minus the contrast effect capturing the (negative) discrepancy between the French dining experience in New York and the local French dinner. Over time, the insight would have been represented as

$$Sat_2 = aE_2 + w_cE_1 - w_cC_1 \quad (1)$$

to emphasize that all events are weighted contributors to well-being and that the key shifts in weights are those between w_e and w_c , the relative impact of the first dinner's endowment and contrast effects. Then, for some weeks afterward, Tversky would bring up real-life examples and see how well the simple representation held up—what of the aging professor whose greatest lifetime contribution was his dissertation, or the young comedian whose greatest exposure was as a break-through act on late-night television? Did their experiences fit? And what about the stories from Stouffer's sociological classic *The American Soldier*, where African-American soldiers stationed in the south of the USA were simultaneously poorer, less free, and more satisfied than African-American soldiers stationed in the north (Stouffer, Suchman, DeVinney, Star, & Williams, 1949)? And while the academic literature from Easterlin to Parducci to

Schwarz would shape the content of the model, it was the test of the anecdote that determined whether the model would survive on the whiteboard or suffer erasure.

The conceptual building blocks of the model are similarity and the role of memory as carriers of (subjectively processed) event quality across time. Tversky and Griffin (1991) asserted that without memory, the concept of life satisfaction or overall well-being would not exist. They pointed to the example of an amnesiac patient who could not decide how happy he was. "The stronger the memory of the past, the greater its impact on present well-being. With no memory, there can be no endowment and no contrast, just immediate pleasures and pains" (p. 102). The memory of event quality in the past thus affects the future both through a direct effect, the endowment (the core effect that keeps giving), and an indirect effect, the contrast (the comparative effect that keeps taking away). An important condition of the model is that it focuses on the symbolic effect of past experiences. Thus, the E-C model is about the dual direct and indirect effects from recalling the evaluation of the event, not from reliving or re-experiencing the event. This distinction was important initially to separate the model from the "mood as information" model of Strack and Schwarz, which implicated mood generated by experience and re-experience as the carrier of contrast and assimilation effects. The distinction is also important as we look at the extensions to the E-C model that tend to merge it with an experiential processing model.

As Tversky and Griffin noted:

There is little novelty in suggesting that well-being depends both on the nature of the experience that is being evaluated and on the standard of evaluation ... Many authors have observed that satisfaction is directly related to the quality of the experience, or its endowment, and inversely related to the evaluation standard, which serves as a contrast. What is perhaps less obvious is the observation that the same (past) event makes a dual contribution to well-being (Tversky & Griffin, 1991, p. 102).

Furthermore, every past hedonic event has this dual capability, but the weight of endowment varies with features of the prior event (e.g., its quality, salience, and intensity), whereas the weight of the contrast varies with features of the relationship between the prior and current event (e.g., the similarity or relevance of the past event to the current event). A honeymoon trip to Spain will contribute to future well-being through the endowment effect to the extent that the original trip was intensely pleasurable and highly memorable. The same Segovian honeymoon may, by the contrast effect, cast a pall on future vacations as a couple (high relevance), but is unlikely to diminish the pleasures of a conference-related trip (low relevance). This implies that the weight or magnitude of the endowment effect could be manipulated by cues that make a specific past event more salient, and that the weight or magnitude of the contrast effect could be manipulated by focusing manipulations that make a past event more or less relevant to setting a standard for a given current event. The final model on the whiteboard was thus:

$$\begin{aligned} \text{Satisfaction} &= \text{Endowment} + \text{Contrast} \\ &= E_{12} + C_{12} \\ &= E_1 + E_2 + r_{12}d_{12}. \end{aligned} \quad (2)$$

Here r_{12} indicates the relatedness of the two events, and d_{12} represents the signed hedonic discrepancy between the two events (again, where the hedonic value refers to the symbolic evaluation stored in memory, not to the actual subjective experience or objective of the event

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itself.) In retrospect, we can recognize one hidden parameter in the model, reflecting that endowment effects from the past will fade with reduced salience, yielding:

$$\text{Satisfaction} = s_1E_1 + E_2 + r_{12}d_{12}. \quad (3)$$

This model raises the important question of whether individual differences in happiness are at least partly determined by these weights: happy individuals may have the predisposition to look to the past for happy events that reflect endowment and unhappy events that generate contrast, and happy people may be able to convince themselves that contrasting negative events are more relevant as standards of comparison than contrasting positive events. This key question was raised in the statement of the original model, but as we shall see, it has only recently been addressed.

APPLYING THE ENDOWMENT-CONTRAST DECOMPOSITION

Tversky and Griffin provided two "definitional" empirical studies to demonstrate the simultaneous operation of endowment and contrast effects. The two studies examined the effects of the past on the present by holding constant the value of present effects, and varying the relevance or similarity of the past to the current event. We provide here a more detailed account of the logic of the identification of endowment and contrast effects in an empirical design than was presented in the original chapter, and we present a revised symbolic vocabulary in the hope of simplifying the presentation. In the scenario study, participants first read a positive or negative story set in the past (1 week ago) from one of four domains (dating, academic achievement, social interaction, or movie-going) and then read a neutral story set in the present about the same or a different domain. This combination yields a 2×2 crossed design (positive/negative past story that is related/unrelated to current neutral story) fully within-subject. For each pair of past/present stories, participants rated the protagonist's level of happiness with life overall.

The results of this study are presented in Fig. 4.1 in the form of a bar graph with the negative past event conditions presented first, broken down by unrelated and related past events. The E-C model predicts a significant interaction between positivity of the past event and relatedness between the two events, because the endowment effects (positive versus negative across the two conditions) are the only effects operating in the unrelated past conditions but are opposed by countervailing contrast effects in the related past conditions. Both the graph and the 2×2 analysis of variance analysis confirm this. However, the total endowment and contrast effects can also be derived from the individual cell-level comparisons,¹ under the assumption that for the time 2 neutral event $E_2 = 0$ and thus can be ignored, that for unrelated events $r_{12} = 0$ and hence $C_{12} = 0$ for unrelated events, and that the salience of the

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¹ Although analysis of well-being surveys is increasingly conducted using only ordinal assumptions for scales of well-being, we treat the decomposition of satisfaction using interval scaling assumptions, consistent with the original statement of the theory.

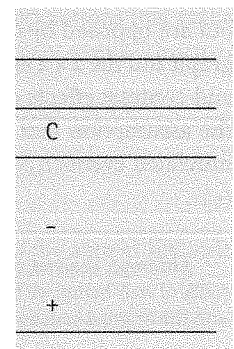
However, if we take the difference between the positive related and positive unrelated conditions, we see that the positive endowment effect cancels out, isolating the negative effect of contrast. Thus, the negative contrast effect associated with a past positive event is simply $6.8 - 7.1 = -0.3$; a reduction of 0.3 scale points of satisfaction. Taking the difference between the negative related and negative unrelated conditions, the negative endowment effect cancels out, isolating the positive effect of contrast: the positive contrast effect associated with a past negative event is simply $5.5 - 4.9 = 0.6$. The sum of these absolute values is 0.9, indicating that the total contrast effect was somewhat less than half the size of the total endowment effect, not surprising given the high salience of the past stories.

The second study illustrating the E-C decomposition used actual money as a reward, which provides a standard scale on which we can compare the relative power of positive and negative contrast effects. In this study, participants rated their satisfaction with the experience of playing two investment games, different types of computer-controlled stock markets. Like the first study, the two games played in sequence could be similar or dissimilar. The games were manipulated so that all participants won a payoff of \$4 in the second game, but either \$2 or \$6 in the first game. Thus, in a conceptually equivalent design to the first study, after completing the second game, participants could look back to the past at either a better or worse experience that was more or less related. However, in this case participants took part in only one cell of the design. As in the scenario study, the E-C model predicts a greater difference in satisfaction between the large and small past payoff conditions when the games are unrelated, because those participants will experience relatively pure negative and positive endowment effects. However, for those experiencing related games, the past also has a contrasting effect on current satisfaction. The same set of contrast weights can be used as presented earlier for study 1, but note the stronger assumption here: the relatedness coefficient r_{12} is again assumed to be 0 when the games are different—this allows the same decomposition—but whereas stories of dating and schooling success are clearly unrelated, it is less clear that the results of two different investment games would be seen as completely unrelated. This simplifying assumption, when it does not hold, will understate the magnitude of the endowment effect, as we shall see shortly.

As can be seen in Fig. 4.2, there is a substantial difference in satisfaction between the small and large unrelated past reward conditions, whereas participants in the two related conditions are almost equally satisfied, implying that the contrast effects almost perfectly offset the endowments. As the second payoff of \$4 is constant across all 4 cells, it is “absorbed” into the grand mean of 7.5. Again, assuming that the less similar experiences were completely unrelated, the difference between the positive unrelated mean and the grand mean reflects the positive endowment ($8.7 - 7.5 = 1.2$), and the comparable deviation from the negative unrelated mean reflects the negative endowment ($6.4 - 7.5 = -1.1$); the total endowment from the prior payoff is thus 2.3. Again, subtracting the positive unrelated mean from the positive related mean isolates the negative contrast effect ($7.5 - 8.7 = -1.2$), and subtracting the negative unrelated mean from the negative related mean isolates the positive contrast effect from a negative experience ($7.3 - 6.4 = 0.9$). Consistent with the key tenet of loss aversion (Kahneman & Tversky, 1979), that losses from a reference point loom larger than gains, the negative contrast is larger than the positive contrast. The total contrast, 2.1, is almost equal to the total endowment, as implied by the shape of the bar graph.

These two studies clarify how the cognitive or symbolic nature of the E-C processes differ from more perceptual models of adaptation effects, such as hedonic treadmill (Brickman &

mediately before the condition consists of simply $E_1^+ = 7.1 - 6.1 = 1.0$. The endowment effect is the sum of these absolute values, complicated by the fact that the endowment and contrast.



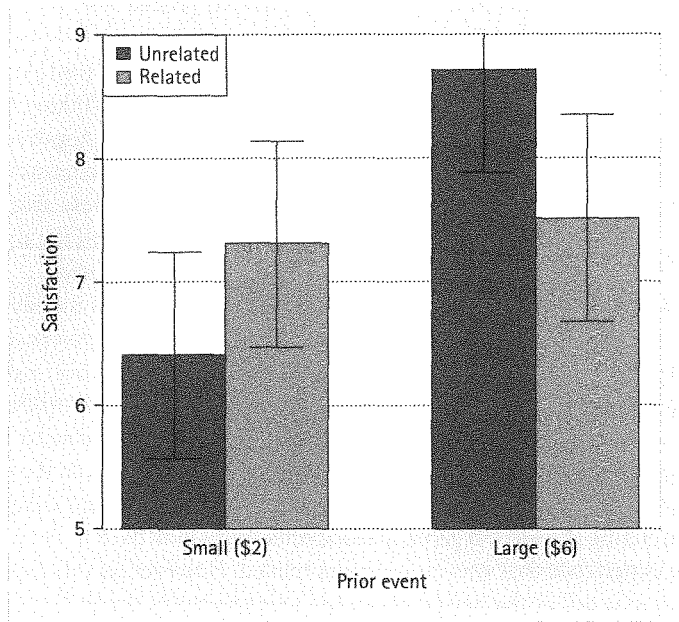


FIG. 4.2 Effect of prior game winnings on current satisfaction.

Campbell, 1971) or range-frequency theory (Parducci, 1984). The key primitive in the E-C framework is the hedonic value of events: events contribute to happiness or satisfaction directly and inversely depending on the closeness and salience of the relation between the target and background events. The key primitive in the adaptation models is the setting of the hedonic scale of experience or measurement: with repetition, the extraordinary becomes ordinary, the exquisite becomes mundane. The adaptation of lottery winners and paraplegics is sometimes described as a contrast effect, such that the accident victim comes to value his or her remaining powers and pleasures all the more due to lowered expectations ("It could be worse") while the lottery winner finds his or her expectations continually dashed through high expectations ("Everything should be wonderful"). The key diagnostic test between contrast and adaptation is whether the momentary hedonic experience is diminished or enhanced because it is made in comparison to a reference state or event (contrast) or whether the hedonic experience itself is intrinsically more or less positive (see Kahneman (1999) for a more general and detailed discussion of the nature of adaptation effects in perception and in judgment).

Just as contrast is fundamentally different from adaptation, so endowment effects in these studies are fundamentally distinct from the class of phenomena known as assimilation effects. Traditionally, assimilation effects refer to the biased interpretation of a new stimulus driven by prior expectations, beliefs, or cognitive schemas, so that the new stimulus is perceived or interpreted to match the prior expectation or belief more than it really does. Simultaneous assimilation is also possible, as when a neutral stimulus appears to be part of a category when other prototypical members of that category surround it. The endowment process is clearly different: the background event or information is not used to change the

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construal of some target event, but in fact adds its endowment to the experience independent of any categorization or construal effects on the target event. Thus, endowment does not compete with assimilation but adds another explanatory concept.

Tversky and Griffin offered alternative explanations of two studies from the mood as information paradigm, applying the E-C decomposition to varying time between experiences and varying relatedness across experiences. The two applications are informative as to the nature of the assumptions necessary to isolate these effects in the E-C framework. Take, for example, the study first presented in Strack et al. (1985) where participants were asked to report their current well-being on a 10-point scale after reporting (a) either a positive or negative life event that actually occurred to them, (b) either recently or in the past. The cell means for the four relevant conditions are presented in Fig. 4.3 in the form of a bar graph, ordered so that conditions defined by events in the present come first, and within that, ordered by positive and negative events. This allows us to use the decomposition table presented for the first study (Table 4.1), with past/present replacing related/unrelated. Like an unrelated event in the past, the positive event in the present provides no contrast, only endowment, so its contribution to satisfaction comes entirely from its positive endowment effect; the same logic holds for those thinking about a negative event in the present; their satisfaction comes only from the negative endowment, and all other effects are zero. This assumption (that the present contributes only endowment) seems reasonable, and provides estimates of the positive endowment (the positive present cell mean - grand mean = $8.9 - 8 = 0.9$), and negative endowment ($7.1 - 8 = -0.9$), and provides an estimate of the total endowment of 1.8 units.

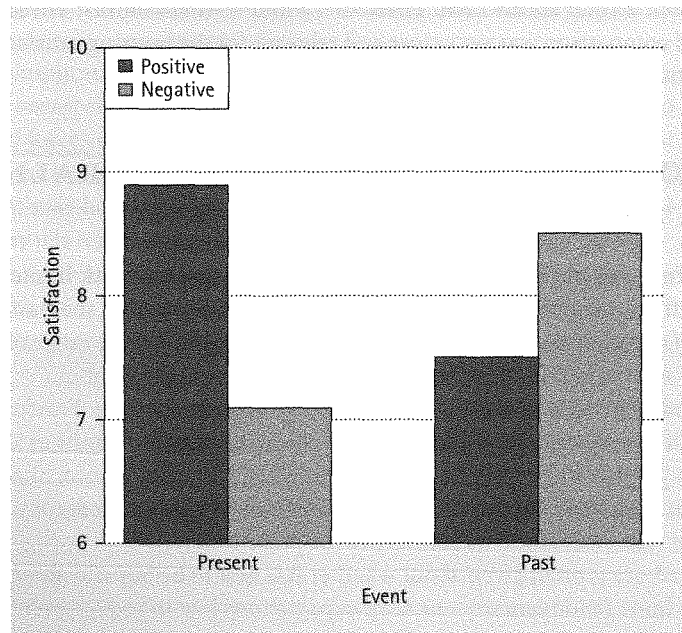


FIG. 4.3 Effect of past or present event on life satisfaction.

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The isolation of the contrast effect relies on a substantially stronger assumption, which is that the amount of the endowment effect is the same for past events and present events. If so, then the same paired-cell subtractions as used in the first two studies are appropriate. On one hand, the degree of salience may be roughly equal because participants are asked to think about both events in the same way and immediately before making the satisfaction judgment; on the other hand, the thoughts about the current event may carry a greater experiential weight and, due to temporal construal (Liberian & Trope, 1998), may be thought of in a more concrete fashion. The resolution of this issue depends on how closely we follow Tversky and Griffin's original distinction between symbolic and experiential effects on well-being: if endowment depends only on salience and not on the degree of re-experienced mood, then this decomposition is appropriate. Following this assumption, we find that the negative contrast associated with the positive past event is -1.4 ($7.5 - 8.9$) and the positive contrast associated with the negative past event is 1.4 ($8.5 - 7.1$), yielding a total contrast of 2.8 , substantially larger than the total endowment. Note that if the assumption of equal endowment (equal salience) of past and present events is violated, the contrast effect will be overstated.

Another application of the E-C framework to the mood as information paradigm examined the effect of putting participants in a pleasant or unpleasant room for an hour before measuring their general life satisfaction and satisfaction with their housing. This application involves another assumption, which is that environmental quality is related to one's current housing but largely unrelated (not at all similar) to one's general life. In other words, "a specific event ... is likely to have a significant contrast effect in the domain to which it belongs, and little or no contrast effect in others." (Tversky & Griffin, 1991, p. 111). Thus, our application of the weighting matrix from study 1 proceeds by replacing "unrelated versus related" with "general life satisfaction versus satisfaction with housing". In brief, the resulting decomposition revealed a total endowment effect of 1.3 and a total contrast effect of 2.5 . Here the standard of comparison was very close and relevant for the housing satisfaction, and led to the strong contrast effect.

ENDOWMENT AND CONTRAST GENERALIZED

Although the first half of the original statement of the E-C framework limited its application fairly tightly to temporally ordered events using memory to link the past and present, the second half of the chapter provided a substantial broadening of the range of applications beyond events and memories of events. The authors noted that the symbolic representations of both past and future can be consumed, resulting in pain or pleasure. Fearfully imagining the results of an upcoming medical test or hopefully imagining the results of an admissions interview both give and take away well-being. Expectations of the future, like memories of the past, can serve as both direct sources of pleasure and pain, and standards of comparison that enhance or take away from the pleasure of the present time.

Conflicting advice is often given about whether it is best to be hopeful about the future—and enjoy that hope (endowment)—or keep expectations low to reduce eventual, and perhaps inevitable, contrast. But less recognized is that consuming pleasant hope for the future may also reduce the pleasure of present experiences through a contrast effect on the present.

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Probability seems to play a key role in determining the relative balance of endowment and contrast from expectations about the future. Very low probability events still provide some endowment through hope and fear, but no contrast. Long-shot bets, whether in lotteries or on horses, produce pleasurable hope and day-dreams, but are so improbable that they do not lead to great disappointment (future contrast) or reduce current pleasures (simultaneous contrast). Likewise, unlikely but tragic health diagnoses provide anxiety or terror during the experience of expectation but little elation after they are ruled out, because a better outcome was always so likely. Thus, it seems that probability moderates the balance of endowment and contrast from expectations about the future much as relatedness or relevance does for memories from the past.

Schwarz and Strack (1999) present data collected by Schwarz and Hippler that allow us to apply the E-C decomposition to data from the inclusion/exclusion paradigm. In this study, university students were asked to recall a positive or negative event from 2 years before; half of the students were reminded that such events took place before university, when they were still high school students. The salience and perceived magnitude of this role transition should thus signal that the past events were not informative about one's current life satisfaction. The E-C decomposition for this paradigm is presented in Table 4.2, on the assumption that past irrelevant events (signaled by the high-school/university divide) provide only contrast, whereas past relevant events provide both contrast and endowment.

The grand mean across all cells is 7.6. Thus the negative contrast effect from recalling a positive event (and being reminded of the distance from high school) is substantial ($6.2 - 7.6 = -1.4$); the positive contrast effect is moderate ($8.2 - 7.6 = 0.6$), and the total contrast effect is large: 2 units. The positive endowment is isolated by subtracting the positive irrelevant mean (6.2) from the positive relevant mean (8.7), which yields 2.5, and the negative endowment is isolated by subtracting the negative irrelevant mean (8.2) from the negative relevant mean (7.4), yielding 0.8. The total endowment is thus 3.3, substantially larger than the contrast effect.

A shared implication of the E-C framework, the inclusion/exclusion model, and the Empathy-Contrast model (Brandstatter, 2000) is that the existence of two countervailing psychological forces in the aggregation of hedonic events over time makes it difficult to find strong relations between objective life circumstances and general life satisfaction. A very positive event may have a net negative or positive contribution to later well-being depending on the way it is represented and processed at the later time.

Table 4.2 Past memory condition

	Effect	
	E	C
Positive Irrelevant (M = 6.2)		-
Positive Relevant (M = 8.7)	+	-
Negative Irrelevant (M = 8.2)		+
Negative Relevant (M = 7.4)	-	+

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EXTENSIONS OF THE ENDOWMENT-CONTRAST MODEL

A preference for happy endings

Ross and Simonson (1991) noted that the E-C model and the operation of loss aversion together predict a general preference for happy endings. In the case of an unhappy ending, a good prior event will take away from the pleasure of a later less-good event; because losses loom larger than gains, the negative contrast effect will be stronger than the comparable positive contrast from reversing the order. In the case of a happy ending, the positive contrast adds to the pleasure of the later good event, consistent with the E-C framework. Ross and Simonson added two novel contributions. First, they used a willingness-to-pay measure for a video game, showing that when a good video game was evaluated after a poor game, participants were willing to pay an additional \$3 on average for the same good game compared to when the poor game was evaluated last. Second, they linked the happy ending effect to the preference for segregating rather than integrating hedonic outcomes. Consider one relevant example,

Mr. A received \$120 from the electric company for overpayments he had made during the year. Later that day, he lost a \$20 bill.

Mr. B received \$100 from the electric company for overpayments.

Who was happier? A or B?

As predicted, for both mixed gains and mixed losses, people thought that integrating the outcomes (as in case B here) would make people happier when the happier event came first. This implies that the negative contrast effect from experiencing the good event first reduces the overall pleasure below that created from the one-shot payment. On the other hand, people thought that segregating the outcomes (as in case A here) would make people happier when the happier event came last, implying that the positive contrast effect from experiencing the good event last enhances the overall pleasure beyond that created by the one shot payment.

This analysis is important because it provides the basis for deliberate strategies that people can use to maximize their welfare from a combination of events.

The relation between wage rates and job satisfaction

Groot and van den Brink (1999) examined the empirical phenomenon that wage level is virtually unrelated to job satisfaction and proposed an explanation that closely overlaps with the E-C framework. According to their model, "Higher wages increase job satisfaction, but as ... aspirations and preferences are changed as well by the higher wage level part or most of this wage effect disappears" (p. 363). Their notion of "preference drift" can be interpreted as either a true adaptation effect to higher wages or a negative effect of contrast working through expectations. Using a standard probit regression model, Groot and van den Brink find a negative, but insignificant, effect of wages on job satisfaction. However, adding

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a term representing an expectations-based contrast or preference drift, so that higher wages require a higher threshold for satisfaction, changes the coefficient for wage on job satisfaction to a more sensible positive and significant value.

The Contrast-Empathy model of social comparison

In motivating the Contrast-Empathy model, Brandstatter pointed out that the effects of social comparison have been interpreted in terms of contrast: feeling good if one performs better than another (especially a relevant other, Tesser, 1988), or feeling worse and motivated to do better if one performs more poorly than another. Festinger's (1954) classic social comparison theory can be seen as a contrast theory (self-other) of comparative satisfaction. Contrast can also be seen as a central mechanism in equity theories of satisfaction, which postulate that people weigh the relative value of inputs and outputs to determine the fairness of outcomes. However, according to Brandstatter, this traditional focus on contrast and the informational role of social comparison neglects the emotional impact of another person's outcomes on the perceiver. If the comparison target is liked or otherwise close to us, we feel good for them if they succeed; if the target person is disliked, we feel good at them if they fail. Brandstatter argues that the pleasure or pain felt upon the good or bad experience of a close target is due to the emotion of empathy (empathic joy or empathic distress) whereas the pleasure or pain felt upon the bad or good experience of a disliked target is due to the emotion of malicious joy or envy.

Brandstatter motivated his model with a little-known comment from Brickman, Coates, and Janoff-Bulman's (1978) classic study of paraplegics, where they reported that interviewers were often depressed by their feelings of empathy with the victim—rather than cheered up by contrast. Later, Tesser (1988, 1991) proposed that people gain from reflecting the high performance or standing of others when the relationship is close and the comparison dimension is of low personal relevance, but suffer from dissatisfaction when a distant other or high-relevance dimension invokes a comparison.

The novel aspect of Brandstatter's Contrast-Empathy model is that a given social comparison can yield both contrast and empathic emotion effects, which can have additive or offsetting effects on one's own satisfaction. The tendency to compare in a competitive sense is heightened for a self-relevant dimension, enhancing the contrast effect. The tendency to feel empathy is heightened for a close positive relationship, enhancing the endowment-like effect (the tendency to feel malicious pleasure is heightened for a distant negative relationship, which introduces a kind of reverse endowment effect). Thus, pure contrast (competitive comparison) will occur for a self-relevant dimension with a target for which one feels neutral. Empathy will dominate for a non-relevant dimension with a target with which one has an extremely close warm relationship. Other combinations of relevance and closeness will lead to mixtures of contrast and empathy. Looking only at positive and negative relationships, positive (better than) and negative (worse than) comparisons, and low and high relevance dimensions yields eight cells, as shown in Table 4.3.

Using a generalization of the linear decomposition from the E-C model (displayed in contrast form in Table 4.3), we can see that the greatest satisfaction comes from a downward comparison on an irrelevant dimension towards someone whom one feels cold or negative. Greatest dissatisfaction comes from an upwards comparison on a self-relevant dimension towards someone whom one feels cold or negative.

Table 4.3 Relationship, comparison level, and relevance condition

	Effect	
	E	C
Warm, Upward, High Relevance (M = -3.3)	+	-
Warm, Upward, Low Relevance (M = -2.5)	+	-
Warm, Downward, High Relevance (M = 1.3)	-	++
Warm, Downward, Low Relevance (M = 0.3)	-	+
Cold, Upward, High Relevance (M = -4.0)	-	-
Cold, Upward, Low Relevance (M = -2.5)	-	-
Cold, Downward, High Relevance (M = 3.5)	+	++
Cold, Downward, Low Relevance (M = 2.3)	+	+

The empathy effects in the four "warm relationship" rows refer to empathic joy and pity, and are analogous to endowment effects created by another person's successes or failures; in the four "cold relationship" rows they refer to malicious pleasure and envy/disappointment, which are essentially reverse endowment effects. The warmth-cold or positive-negative relationship is a continuous variable, with intensity of the effect controlled by the intensity of the relationship, analogous to the salience parameter implicit in the original E-C framework.

The cell means presented are derived from a study (Brandstatter, 2000, study 2) where participants were presented with a set of salary comparisons between two individuals who varied in the warmth of their relationship and how self-relevant salary was to them both. Participants rated the satisfaction of three target individuals 21 times to indicate satisfaction with salary comparisons that ranged from -30% to +30%. We provide the approximate cell means for satisfaction at the 20% and +20% salary comparison level (estimated from aggregated regression lines, rescaled to a -5 to +5 range of dissatisfaction-satisfaction).

The close, warm relationships used were still relatively distant (friends from school years), so we would expect a relatively weak effect of empathy compared to contrast. Looking at the cell means, we can see that all downward comparisons led to satisfaction and all upward comparisons led to dissatisfaction, consistent with the dominance of contrast. The highest level of satisfaction was, as predicted by the Contrast-Empathy theory, in the negative relationship, relevant dimension, downward comparison cell. The highest level of dissatisfaction, again consistent with Brandstatter's predictions, was in the negative relationship, relevant dimension, upward comparison cell. The overall grand mean is -0.6, which is consistent with losses looming larger than gains. The empathy effects cannot be isolated, but the relative contrast effects between low and high relevance can be computed for every matched pairs of cells. The largest relative contrast effect is for comparing the high and low relevance version of the cold relationship upward comparison (difference = 1.5), and smallest for the warm relationship upward comparison (difference = 0.08) implying that the power of the contrast effect is also somewhat sensitive to the quality of the interpersonal relationship.

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An interesting application of the Contrast-Empathy model is to intergroup or international comparisons of well-being. It is often assumed that a relatively wealthy individual in a poor country would feel highly satisfied because of the dominance of local comparisons. However, the Contrast-Empathy model implies that individuals who identify with their own region might experience off-setting feelings of empathy and contrast relative to the worse-off majority around them. Helliwell, Barrington-Leigh, Harris, and Huang (2010) examined direct and contextual effects of income and social resources on life satisfaction across 50 nations. They found that having good friends had substantial positive effects both at an individual level and a contextual level. The individual-level coefficient represents the comparison of individuals within a country who have friends versus those who do not—a standard social support finding. The contextual effect is more intriguing, as it represents the comparison of individuals who come from countries where people, on average, are more or less likely to have friends. This, then, is a societal empathetic endowment effect à la Brandstatter.

The affective Endowment-Contrast model

Brandstatter's model of social comparison was developed by integrating several approaches in the social comparison literature. Despite this, the resulting model is a close analogue to the E-C model with additional emotional processing. Cheng (2004) directly applied the E-C framework to emotion and mood, using emotional experience rather than symbolic consumption as the building blocks of satisfaction. Cheng's approach builds upon Bradburn's (1969) affect balance model, which posits that overall well-being is a function of the difference between positive affect (PA) and negative affect (NA). However, Cheng notes that this linear discrepancy model ignores context or interaction effects that may arise through adaptation: positive affect may have a greater impact when negative affect is predominant. "When life is smooth, the effect of adding more positive experiences may be marginal." Thus, the affective approach predicts that overall life satisfaction can be modeled by a linear additive term and an interactive term, so that affective well-being = (PA - NA) + (PA × NA). According to Cheng's definition, the main effects of PA and NA are equivalent to endowment effects, and the interaction is equivalent to contrast effects. Following Tversky and Griffin's original approach, the affect model examines the effect of the past on the present; unlike the original model, it looks at the aggregated balance of positive and negative emotions, not on the effect of a specific past experience. Thus, the focus is no longer on the direct and indirect effects of a given event on well-being, but on how a given emotional experience will have a different effect on well-being depending on the makeup of the rest of the set of experiences. To test this model, Cheng collected diary data twice daily for 4 weeks using a set of adjectives representing current positive and negative affect. The average levels of PA and NA (and their interaction) were then related to the reported general life satisfaction a week after the conclusion of the 4 weeks. Significant regression coefficients were found for PA, NA, and their interaction, although the effect size for PA dwarfed the other terms. A plot of the relevant interaction (slopes for PA on satisfaction broken down by high NA, + 1 SD, and low NA, -1 SD) showed that the effect of PA was stronger for those high in NA. This is consistent with the view that PA has a greater impact against a background of regular NA (or conversely that PA has a reduced

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empathic joy and pity, successes or failures; in envy/disappointment, or positive-negative, modulated by the intensity of the original E-C frame-

2000, study 2) where two individuals who were equally satisfied. To indicate satisfaction levels, we used the approximate level (estimated from the original E-C frame-

years), contrast. Looking at the interaction and all upward contrast. The highest level of dissatisfaction, negative relationship, is -0.6, which is constant for every matched high and low relevance and smallest for the interaction relationship.

impact—perhaps because of adaptation—against a background of more positive than negative affect).

APPLICATIONS OF THE ENDOWMENT-CONTRAST MODEL TO REAL-LIFE EXPERIENCES

Partly motivated by the capacity of some Holocaust survivors to find meaning and satisfaction in comparing the present to the worst times of life (and of others to reflect long and painfully on those terrible times), Liberman, Boehm, Lyubomirsky, and Ross (2009) examined the dispositional tendency to use contrast and endowment strategically to enhance happiness. Their central tool was a measure of propensity to dwell on negative or positive endowments from the past (thereby contributing negatively or positively to well-being) versus negative or positive contrasts from the past (thereby contributing positively or negatively to well-being). Notably, endowment self-report items measured both the tendency to re-experience past events (“When I think about happy events in the past, I often smile or laugh”; “I sometimes dwell on unhappy past events and even relive them in a way that makes me feel sad and depressed”) and the tendency to strategically use such memories to boost happiness or to reflect on how the past continues to poison the present (“When I recall happy events in the past, I realize how much they enrich my life”; “When I recall unhappy events in the past, I realize what a negative effect they had on my life”). Recall that endowment effects are assumed to be greatest for events that are highly salient, easy to recall, and informative about the present.

Contrast items measured the self-reported tendency to use the past as a standard of comparison (“The comparison of the present with unhappy past events makes me feel content and grateful”; “When I recall particular happy events in the past, the contrast with the present makes me a little sad and depressed”), but for negative contrast, also implicated a belief in a generally declining quality of life (“I often think about ways in which things have gotten worse for me than they used to be”).

The authors related these propensity measures to a general measure of dispositional affective happiness (“Some people are generally very happy. They enjoy life regardless of what is going on...”). Across three samples in Israel and the USA, the authors find consistent moderate correlations (with the appropriate signs) between dispositional happiness and self-reported tendencies to use positive endowment, negative endowment, and negative contrast as inputs to present happiness. Support for the positive contrast strategy was found only in the American sample. These results were found whether the E-C propensity items referred to the past in general or to memories of a specific past happy or unhappy event.

As the authors note, the findings are consistent with the claim that happy and unhappy people think about the past differently, but cannot distinguish between an account where happiness drives the use of memories and one where the use of memories drives happiness. Like each of the application studies, the Liberman et al. investigation highlights the difference between the original conception of endowment as a symbolic, cognitive effect and the broader, more experiential conception that includes savoring, rumination, and emotional reliving of the event.

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The complexities of interpreting natural experiences in the E-C framework explains why so few naturalistic studies have followed this model. The general statement of the theory—beginning with the narrow account of the dual functions of past hedonic experiences on current life satisfaction and broadening to an account that included “memories and expectations; successes and failures of the past, hopes and fears of the future”—is a conceptual framework for thinking about the role of endowment and contrast in measurements of well-being. The extensions of the model to social comparisons and emotional experiences serve to further broaden the toolbox of applications.

UTILITY VERSUS WELL-BEING, CHOICE VERSUS JUDGMENT

Psychologists and sociologists talk of well-being, happiness, and satisfaction whereas economists traditionally restrict their vocabulary of motivation to the concept of utility. However, even utility can be used in two different senses (Kahneman & Tversky, 1984): experience utility, the pleasure or pain from the actual experience of an event or outcome, and decision utility, the anticipated gain in pleasure at the time of choosing (or *predicted utility*; Kahneman & Varey, 1992). Experience utility, like well-being, is generally assessed by judgmental methods such as ratings, pricing, or satisfaction thermometers. Decision value is generally inferred from choices, typically binary in nature. Most naturally, judgments take place after the event is experienced; choices take place in advance and require an assessment of predicted utility.

However, even when choice and judgment are both made prospectively and broadly measure decision utility, they differ in how they are affected by contrast and endowment. Given the prominence of choice in economic measurement, we first explore the choice-judgment discrepancy and review relevant research before following up the more general issue of how well-being measures differ in their sensitivity to endowment and contrast.

There are two key methodological differences between choice and judgment, both of which have implications for the role of contrast and endowment. First, choice requires a binary outcome whereas judgment requires a continuous measurement scale. The forced-choice methodology favors the option that is highest on the most important dimension (the “prominence effect”; Tversky, Sattath, & Slovic, 1988) because it leads to a search for a single dominating reason to choose. A continuous scale of judgment leads to a broader focus on combining multiple inputs to form the final judgment (Slovic et al., 1990). In general, endowment (the actual amount of money or pleasure or pain) is a more prominent or justifiable reason to choose than contrast, and hence dominates choice, whereas judgment is based on a combination of both contrast and endowment.

Second, choice is fundamentally comparative whereas judgment is largely absolute. The focus in choice is what is different between options. This leads salient qualitative differences across conditions to loom larger in choice than in judgment. Consider two job scenarios that are comparable in every way but differ by \$50 in annual salary. If all else is equal, everyone will choose the job with the higher salary, a huge effect size. Yet the difference in judged attractiveness of each job taken alone will surely be vanishingly small.

Consider the related versus unrelated stock market games described earlier to make this point: Clearly, everyone would choose the negative contrast condition (where total earnings were \$10 based on an initial reward of \$6 and a final reward of \$4) rather than the positive contrast condition (where total earnings were \$6 based on an initial reward of \$2 and a final reward of \$4) if they compared the two outcomes. In this case, the chooser thinks not about happiness or satisfaction, or the processes that would lead to either, but simply about the dominating argument that \$10 is better than \$6. Yet, the satisfaction judgments were indistinguishable across conditions because they reflected the joint (countervailing) effects of contrast and endowment.

Tversky and Griffin tested this intuition in a job choice scenario experiment that equated endowment with total annual salary and contrast with the standard of comparison salary. The results have been widely cited by economists, although, as we later describe, its implied methodological critique of using choice as the sole or privileged measure of utility has not affected economic practice. Student participants were asked to imagine they had a job offer as a junior editor at two magazines: one position paid \$35,000 as an annual salary, but most other similar workers received \$38,000 per year; the second position paid \$33,000, with most similar workers receiving \$30,000. Participants were asked either to choose the job they would take, or to indicate which job would make them happier. The reversal in observed "preference" between conditions was dramatic: 84% of participants chose the job with the higher salary (endowment) and higher comparison level (negative contrast), but 62% expected to be more satisfied with the job that was defined by a lower comparison level (positive contrast) and lower salary (endowment).

To examine whether these results generalized to actual experiences, Tversky and Griffin (1991) assessed satisfaction versus choice with rewards from a pair of two-part competitive games. The design placed particularly strong pressures on participants to be consistent across measures as it assessed satisfaction and choice within subjects, with the choice coming *after* the measure of satisfaction with the two outcomes. Any participant who showed a "reversal" from satisfaction to choice was thus fully aware of his or her own inconsistency. Contrast was created by providing feedback on both practice and reward trials—improvement created a positive contrast and declining performance created a negative contrast. Each participant improved in one game, but received a higher reward for the other game (\$3 versus \$1). After each game, participants rated their satisfaction with their performance; after completing both tasks and both satisfaction ratings, participants were asked to choose which task they would choose to do. For those participants who gave non-identical ratings of satisfaction across the two tasks, a little more than half (54%) expressed greater satisfaction with the positive contrast, low-payoff task. However, 75% of those also chose the negative contrast, high-payoff task, again consistent with the notion that the payoff, representing endowment, loomed larger in choice than in judgment, presumably because it provided a more compelling reason to choose.

It is noteworthy that econometric analyses of the relation between well-being and whether one's neighbors are richer or poorer than oneself support the notion that relative income can drive happiness (Luttmer, 2005): controlling for one's own salary, having higher earning neighbors is associated with lower levels of happiness, consistent with a contrast effect, and having a higher standard of comparison income within a job category is associated with lower levels of job satisfaction (Clark & Oswald, 1996).

The implications of the choice-judgment discrepancy for the economic study of well-being can be seen by its application to Pareto optimality. This simple economic principle

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defines an acceptable (or Pareto optimal) allocation of resources as one that improves everyone's lot: the change entails no losers, only winners. As a choice criterion, this has considerable force; one should prefer a world where one's lot is improved, even if other people's lots are improved more. However, judged (and experienced) satisfaction may go down, not up, under Pareto optimality. Consider an organization that provides 100% salary increases to a few executives, and 5% salary increases to everyone else. Surely, everyone in the organization would choose this state of affairs over the previous state. All the same, the negative effects of the contrast and comparison would make most of the individuals less satisfied with their lot.

Another dramatic example of the choice-judgment discrepancy comes from a study of Olympic athletes (Medvec, Madey, & Gilovich, 1995): silver medalists feel worse than lower-performing athletes, presumably because of the pain of comparison. Yet, it is absurd to believe that an athlete would choose to come in fourth or sixth and give up the endowment value of a second-place finish in order to avoid the painful contrast effect. This colorful example also highlights the subtle variety of comparison processes that can create contrast: the silver medalists did not use the gold medalists as the standard, but instead were haunted by the ease of imagining themselves on the gold podium.² This example invites the question of what choice measures measure, and what is utility, if people systematically make choices that do not maximize their experienced pleasure.

In a series of survey studies, Solnick and Hemenway (1998, 2005; see also Alpizar, Carlsson, & Johansson-Stenman, 2005; Carlsson, Johansson-Stenman, & Martinsson, 2007) examined the role of comparison/interpersonal contrast (which they term "positional concerns") across a range of goods, including salary, attractiveness, and vacation time. For example participants were asked to choose between a world in which they earn \$50,000 and others earn \$25,000, and a world in which they earn \$100,000 and others earn \$200,000; and between a world in which they have 2 weeks of vacation time and others have 1 week, and a world in which they have 4 weeks of vacation time and others have 8 weeks. Respondents preferred being relatively more attractive than others, were indifferent about relative versus absolute education and relative versus absolute salary, and strongly preferred a longer absolute vacation than a comparatively longer (but absolutely shorter) vacation. The authors argue that positional concerns (i.e., contrast and comparison) need to be incorporated into public policy. "Benefits to the rich will hurt the poor if the poor, like everyone else, care about their relative standing. The majority of respondents to our survey rejected the prospect of everyone becoming richer if it was accompanied by a fall in their own relative standing" (Solnick and Hemenway, 1998).

A more general explanatory account that characterizes domains where choice may deviate from judgment, and contrast will be more important is the evaluability model (Hsee, 1996; Hsee, Loewenstein, Blount, & Bazerman, 1999). According to this framework, choice is a paradigmatic example of a "joint" or comparative evaluation mode whereas judgment is a paradigmatic example of a "single" or non-comparative evaluation mode. The tendency for joint evaluations such as choice to deviate from single evaluations such as satisfaction judgment is accentuated when the stimulus dimensions are low in "evaluability", that is, when it is difficult to determine what is a high and low level of the stimulus without a guiding comparison or norm. For example, temperature is inherently evaluable—it is clear that

² Van Dijk and Zeelenberg (2005) show that counterfactual regret is controlled by the similarity between the obtained and the foregone object, consistent with the E-C account.

life in a city with a mean temperature of 4°C will be dominated by feeling cold, while life in a city with a mean temperature of 30°C will be dominated by feeling hot. It is possible to make an informed judgment of the impact of temperature on one's quality of life just by considering the temperature in a single city. On the other hand, money is not intrinsically evaluable and hence is difficult to weigh without a norm or comparative option.

This joint-separate evaluation framework was motivated by an early example of Bazerman, Loewenstein, and White (1992), where respondents were asked to choose (joint evaluation: comparative) or rate (single evaluation: absolute) which settlement option was more acceptable: \$600 to the self and \$800 to a neighbor, or \$500 to the self and \$500 to the neighbor. Given that money is not intrinsically evaluable, participants who *rated* the acceptability of one option at a time focused mostly on the relative information (the negative contrast); thus the equal payoff was rated as more acceptable by 71% of respondents. However, when participants were asked to indicate (in a comparative mode) which option was more acceptable, 75% selected the unequal, higher payoff (better endowment, less contrast). Money—not intrinsically evaluable when evaluated singly—loomed large when comparison made the differences in one's own payoffs prominent. Another example brings the evaluability concept into the domain of well-being: Hsee (1993) presented participants with two hypothetical salary options, a higher absolute amount with a decreasing trend over 4 years, and one with a lower absolute amount but an increasing trend over time. In joint evaluation mode (choice), participants slightly preferred the higher overall salary because the mean difference was highly salient; however, in the separate evaluation mode (judgment) participants clearly preferred the option with the increasing salary trajectory. Again, this analysis using evaluability coincides with the endowment-contrast account of the choice-judgment discrepancy.

The evaluability and E-C approaches to the choice-judgment discrepancy converge in these examples, but they are based on related but distinct explanatory frameworks. For example, the job choice salary reversal example from Tversky and Griffin (1991) compared choice and satisfaction measures that are both in a joint evaluation mode, and so cannot be explained by evaluability. The evaluability framework adds to the E-C framework two important guiding principles. The first is that joint evaluation (choice) will tend to systematically overpredict the impact of non-evaluable dimensions relative to single evaluation judgment—or to experience—and tend to systematically underpredict the impact of highly evaluable dimensions (Hsee, Hastie, & Chen, 2008). Second, the evaluability framework provides an explanation for which types of resources will be preferred for absolute magnitude versus positional advantage: resources such as intelligence and attractiveness, which are inherently non-evaluable without a standard of comparison, will be chosen for positional advantage; resources such as days of vacation or hours of sleep, which are inherently evaluable even without a standard, will be chosen for absolute advantage. Putting the two principles together, and realizing that endowment will generally be less evaluable than contrast, which carries with it a standard of comparison, should help provide a roadmap to those areas of life where contrast versus endowment will dominate people's choices, and whether such choices will be reflected in experience.

The purpose of the E-C analysis of the choice-judgment discrepancy was to highlight the possibility that there may be no single gold standard of well-being or utility. However, John Stuart Mill (1863) was clear in his mind that choice—and the comparative stance—is superior, and that the associated focus on the most prominent dimension was justified, especially when that dimension referred to a more cultured outlook.

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Now it is an unquestionable fact that those who are equally acquainted with, and equally capable of appreciating and enjoying both, do give a most marked preference to the manner of existence which employs their higher faculties It is better to be a human being dissatisfied than a pig satisfied; better to be a Socrates dissatisfied than a fool satisfied. *And if the fool, or the pig, is of a different opinion, it is because they know only their own side of the question.* The other party to the comparison knows both sides. (p. 14, italics added)

On the assessment of well-being: the role of endowment and contrast

One of the major areas of progress in the study of well-being over the 20 years since the publication of the E-C framework has been the clarification of the status of different measures of well-being. The vast number of well-being measures can be roughly classified into four clusters: affective measures, happiness measures, life satisfaction measures, and comparative life satisfaction measures. The measurement clusters move from the most affective and tied to immediate experience (based on immediate feelings and described as measuring hedonic well-being (Stone, Schwartz, Broderick, & Deaton, 2010) or objective happiness (Kahneman, 1999)) to the most cognitive and summative (based on systematic thought and reflection, described as global well-being).

What lessons does the E-C framework have for understanding the role of different measures? The key question, as always, is the contribution to expressed well-being from the direct immediate experience, the direct contextual endowment, and the indirect contextual contrast. At first thought, one might imagine that the more affectively immediate measures would be more responsive to endowment whereas the more reflective measures would be relatively more responsive to contrast and comparison. However, the evidence is mixed. Consider immediate experience sampling measures, a family of measures ranging from asking respondents about their contemporaneous experience of positive and negative emotions to asking respondents to keep diaries of emotions experienced during specific events, either at specific times of the day or at randomly indicated times. Kahneman, Krueger, and colleagues (e.g., Kahneman & Krueger, 2006) have suggested a U-index to summarize such measures (an index assessing the relative time spent in unpleasant emotions).

In a cross-country analysis, Kahneman and Krueger (2006) found that French women report spending more time in a pleasurable state than American women, but nonetheless report lower life satisfaction—in other words, a contradiction between measures of “objective” and “subjective” well-being. The authors interpret this as a possible extremity bias for Americans, and conclude that caution is warranted for cross-national comparisons of global satisfaction. In addition, it seems possible that the cultural reversal arises due to different standards of comparison, which weigh more heavily in satisfaction than in immediate pleasure. Momentary experiences show only a small impact of life circumstances, whereas satisfaction reflects income and material wealth, as described as follows.

Diener, Kahneman, and colleagues have contrasted the relation between income and immediate affective responses and that of income and global measures of satisfaction (Diener, Kahneman, Tov, & Arora, 2010). The measure of satisfaction that is least directly influenced by affect is the Cantril ladder (Cantril, 1965), which asks respondents to report

(on a visual ladder) where their life falls from the worst possible to the best possible life imaginable.

The Cantril ladder is a particularly interesting measure from the viewpoint of the E-C framework because it contradicts the usual rule that more cognitive and less experiential measures are more reflective of contrast. By asking for a comparative judgment with truly global anchors (the worst versus best possible life brings to mind the extremes that the world has to offer) the ladder minimizes the effect of contrast, at least in the judgment process. Thus, to the extent that individuals face different contexts—whether national, neighborhood, or notional comparisons—these should have minimal effects on the ladder, as long as people can imagine roughly similar best and worst possible worlds. This is consistent with the finding that the ladder is most responsive to objective circumstances in international comparisons of well-being.

CONCLUDING REMARKS

The focus of research on happiness has changed dramatically in the 20 years since the E-C framework was first presented. In particular, the field has a much clearer understanding of the complexities of different measurement procedures. Nonetheless, a cautionary note about accepting well-being measures at face value is still valuable. Consider the recent announcement about the introduction of a “well-being index” to the UK (as well as to many other European countries).

One government source said: “If you want to know things – Should I live in Exeter rather than London? What will it do to my quality of life? – you need a large enough sample size and if you have a big sample, and have more than one a year, then people can make a proper analysis on what to do with their life.” (Stratton, *The Guardian*, November 14 2010)

The notion of a “well-being index” presupposes that a single number, or at most a vector of numbers, will be sufficient to indicate whether people in London or Exeter are happier or more satisfied. However, the E-C framework implies that the way that people think about their lives, as well as the questions they are asked, can fundamentally shift—even reverse—their preferences across situations. Thus, the E-C framework can still play a useful role in preventing a simplistic—and hence misleading—approach to measuring well-being.

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