

Evaluative Judgments of Aspects of Life as a Function of Vicarious Exposure to Hedonic Extremes

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In two experiments, the hypothesis was corroborated that vicarious exposure to hedonic extremes—especially the hedonically negative—results in contrast regarding evaluative judgments of aspects of life that have evolved or been acquired in the course of life *beyond* the laboratory. In Experiment 1, participants who wrote about hedonically negative events occurring at the turn of the century expressed greater satisfaction on a composite index of present life quality than participants who wrote about hedonically positive events. In Experiment 2, participants who wrote about hedonically negative events, personal tragedies, scored higher on a composite index of satisfaction with life, health, and physical appearance than participants who wrote about hedonically positive events. The findings for the composites corroborate a comparison level model of evaluative judgment. The findings for individual items, however, suggest that aspects of life are not evaluated in terms of a single utility scale and standard—the comparison level. Other findings are discussed that appear to contradict a simple affective model of evaluation in which the positivity of evaluations is postulated to increase with the positivity of affective states.

A number of psychologists have generalized perceptual (Helson, 1964) and judgmental (Volkman, 1951) principles, corroborated in the traditional experimental psychology laboratory, to social judgment. The most well-known generalization is that of Thibaut and Kelley (1959) who proposed a theory of the evaluation of outcomes resulting from social interaction. Although outcomes might differ in their specifics, it was assumed that all outcomes could be characterized in terms of their utility or hedonic value. The com-

parison level was conceptualized as a “psychologically meaningful midpoint for the scale of outcomes—a neutral point of satisfaction-dissatisfaction,” (p. 81) and was defined as the “average value of all the outcomes known to the person (by virtue of personal or vicarious experience), each outcome weighted by its salience (or the degree to which it is instigated for the person at the moment)” (p. 81). An outcome, therefore, is judged to be positive or negative to the extent that its hedonic value is, respectively, above or below the comparison level.

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Comparison level theory has been corroborated in a number of studies in which satisfaction with outcomes attained *within* experiments has increased as a function of manipulations hypothesized to lower the comparison level (e.g., Brickman, 1975; Friedland, Arnold, & Thibaut, 1974). Judgmental theories, however, apply to the evaluation of outcomes that are of greater importance to individuals than those usually bestowed upon participants in laboratory experiments. Thibaut and Kelley, for example, illustrated

their theory in terms of marital satisfaction. Volkman (1951, p. 286) also presumed the generality of judgmental principles. More recently, Brickman and Campbell (1971) generalized adaptation level theory (a conceptual cousin of comparison level theory) to satisfaction with, for example, personal wealth and competence. These generalizations are intriguing, but are without direct experimental support.

In this report, two experiments are presented in which the generality of comparison level theory was tested for evaluations of *important and often vital life outcomes that have evolved or been acquired in the course of a participant's life beyond the laboratory*. Furthermore, a condition in which participants were vicariously exposed to the hedonically negative was common to both experiments. The importance of this condition in testing comparison level theory, for this judgmental domain, is emphasized.

Experiment 1¹

In the past 10 years, a social indicator movement has evolved in which it has been proposed that the well-being of the nation can best be assessed by measuring a broad range of variables. Andrews and Withey's (1976) respondents, in particular, indicated their feelings regarding various aspects of life along rating scales similar to those used in laboratory studies of contrast. Furthermore, the "objects" of judgment (for example, the respondent's life as a whole and standard of living) differed from those of previous laboratory studies of contrast. The study of contrast in relation to judgments of the quality of life offers, consequently, an opportunity to replicate the response assessment methodologies of previous experiments and to generalize comparison level theory to a new class of stimuli. Furthermore, although the theoretical orientation of the present report tends toward linguistic rather than perceptual or subjective interpretations of contrast (see Manis, 1971) and comparison level theory (see Upshaw, 1969), as Andrews and Withey (1976) have noted, "anything that can be done to improve the human

lot that is reflected as felt improvement is a condition to be coveted" (p. 10).

Hedonic Manipulation

In the present experiment, comparison level theory was tested by presenting historical information regarding life at the turn of the century. In the "good old days" condition, life was presented as the embodiment of traditional American ideals. For example, educational instruction was described as personalized, and students were depicted as having excellent foundations in reading, writing, and arithmetic; the air was clean and the water pure; there was time for people to genuinely relate to one another; food was wholesome and nutritious; people enjoyed their work and took pride in the products and services they provided; and government was efficient. In the "bad old days" condition, a description was presented of what historically appears to have been the plight of the vast majority of Americans. This information and the contrast principle are described in Otto Bettmann's (1974) prefatory remarks to his *The Good Old Days—They Were Terrible!*:

I have always felt that our times have overrated and unduly overplayed the fun aspects of the past. What we have forgotten are the hunger of the unemployed, crime, corruption, the despair of the aged, the insane and the crippled . . . In most of our nostalgia books . . . the period's dirty business is swept under the carpet of oblivion. What emerges is a glowing picture of the past, of blue-skied meadows where children play and millionaires sip tea.

If we compare this purported Arcadia with our own days we cannot but feel a jarring discontent, a sense of despair that fate has dropped us into the worst of all possible worlds. (pp. xii-xiii)

Female students evaluated the present quality of life at the beginning of the semester and some weeks later, immediately after having been exposed to one of the experimental conditions. It was generally hypothesized, on the basis of comparison level theory, that pretreatment-to-posttreatment changes in evaluations would be more positive in the

¹Special thanks are due Linda S. Mezydlo and David Stamm for preparing stimulus materials and helping conduct this experiment.

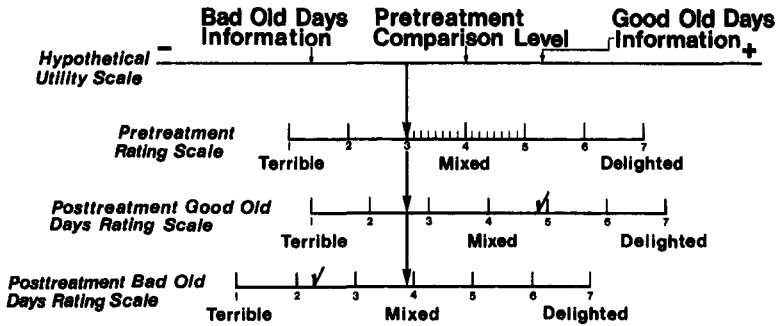


Figure 1. Location of pretreatment comparison level and information presented in experimental conditions, in relation to a hypothetical utility scale and rating scales.

bad than in the good old days condition. In particular, it was hypothesized that evaluations of present life quality would increase from pretreatment to posttreatment in the bad old days condition (positive contrast) but tend to decrease (negative contrast) somewhat or remain unchanged in the good old days condition.

The prediction of differential absolute magnitudes of contrast across experimental conditions and therefore a *stronger* test of comparison level theory in the hedonically negative than in the positive condition is illustrated in Figure 1. As indicated on the uppermost horizontal (utility) scale, the good old days information was assumed, by virtue of conveying traditional American values, to be closer in hedonic value to participants' pretreatment comparison levels than the bad old days information. The second horizontal line represents the pretreatment rating scale, centered at the hedonic value of the pretreatment comparison level. As Upshaw (1969, p. 347) has noted, comparison level theory implicitly assumes that the "origin" or midpoint of each judge's reference scale is anchored at the comparison level. The third horizontal line represents the posttreatment rating scale in the good old days condition, which has been shifted about three eighths of a unit upward in relation to the pretreatment rating scale. This shift follows from the definition of the comparison level as the average of all known outcomes, each outcome weighted by its salience, although the absolute magnitude of the shift is arbitrary. The fourth horizontal line represents the posttreatment rating scale

in the bad old days condition, which has been shifted about seven eighths of a unit downward in relation to the pretreatment rating scale. Again, the absolute magnitude of the shift is arbitrary but is consistent with the definition of the comparison level as an average—the assumed hedonic value of the bad old days information and the magnitude of the shift postulated in the good old days condition.

The vertical line cutting across the three rating scales in Figure 1 represents an aspect of life that was evaluated 3 on the premeasure. As a consequence of the hypothesized scale shifts, its posttreatment evaluation is 2.7 in the good old days condition (a shift of .3 unit downward) and 3.9 in the bad old days condition (a larger shift of .9 unit upward). Finally it is important to note that although the posttreatment scales are postulated to shift, the assumptions just mentioned imply that posttreatment evaluations of the bad old days information in the bad old days condition should more greatly depart from the posttreatment scale midpoint than corresponding evaluations in the good old days condition. This implication is illustrated by the location of check marks on the posttreatment scales.

Scale Anchoring

Mere prior exposure to a stimulus complex that contrasts with a stimulus under evaluation has not generally been considered sufficient for generating contrast effects (see Eiser & Stroebe, 1972, p. 48). Judgmental

theorists have considered anchoring processes in which the response scale is coordinated with the continuum putatively underlying judgments. To the extent that only one segment of the range of potential stimuli is presented *and* judged, with the location of this segment varied across experimental conditions, linguistic effects may be generated. Pepitone and DiNubile (1976) recently used such a procedure in studying crime-related judgments. They reported, for example, that a homicide was judged to be a more severe criminal violation when participants first had read *and* publicly judged the seriousness of an assault case than in a condition in which the first case was another homicide. The overt recording of the first judgment appeared to be a necessary condition for producing a contrast effect.

In the present experiment, an anchoring manipulation was also included. After participants had been exposed to the stimulus materials and had written about them, all participants indicated their feelings regarding the present quality of life in Milwaukee. In the unanchored condition, participants simply expressed their judgments in terms of aspects of present life quality. In the anchored condition, participants were required to first evaluate an aspect of their present life in terms of the quality of life in Milwaukee in 1900, *immediately before* expressing their judgment of the same aspect of present life quality. Theoretically, this manipulation should increase the salience of the hedonic information and consequently result in greater contrast because of greater shifts in comparison levels in the anchored than in the unanchored conditions.

Method

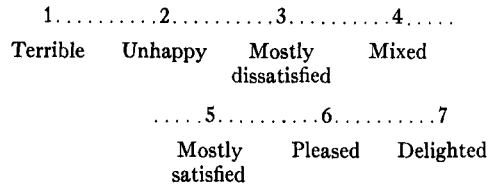
Participants

Seventy-three women enrolled in introductory psychology at the University of Wisconsin—Milwaukee participated in the experiment in exchange for extra credit in their courses. Women were selected as a matter of convenience.

Pretreatment Measures

At the beginning of the semester, a survey was distributed that included a series of questions per-

taining to the quality of life. Women indicated their feelings regarding the following aspects of their lives: life as a whole; personal health; standard of living; amount of time for doing the things they want to do; the way the police and courts in this area are presently operating; present working conditions in Milwaukee; present quality of education in Milwaukee; quality of their food; the present efficiency of the fire department; the honesty of present local, elected officials; the present physical environment in Milwaukee—the purity of the air, lakes, and streams; the present level of public spirit and civic involvement in Milwaukee; and the present quality of human relationships (e.g., between family members, doctors and patients, and merchants and customers). Items were included that appeared relevant to the hedonic manipulation. Respondents answered each question by placing a check mark *anywhere* along a 67-point rating scale similar to that of Andrews and Withey (1976, p. 18):



Those women whose ratings were between Unhappy (12) and Pleased (56) were invited to participate several weeks later and randomly assigned to conditions.

Procedure

Participants were run in small groups ranging in size from 2 to 10 women and responded independently to materials. Participants were told that their conceptions of life in Milwaukee at the turn of the century were being studied. Specifically, they would be asked to write a description of a day in the life of a typical Milwaukeean living in 1900. Participants were told that since they were probably not intimately familiar with life in 1900, materials describing this era would be presented. Participants were instructed to imagine vividly what life was like in Milwaukee in 1900 and to take notes if they wished.

Audiovisual Materials and Presentation Procedure

In all conditions, participants viewed an identical series of 16 slides; materials susceptible to multiple interpretations were used. Accompanying each slide was a tape-recorded narrative by which hedonic information was manipulated. In the good old days condition, life was described positively, whereas in the bad old days condition negative aspects were emphasized. For example, portions of the narratives associated with a slide of an elaborate fountain in

a park were as follows:

(Good old days). Beautifully carved fountains such as this one on Kilbourn Avenue provided a cooling respite for Milwaukeean and contributed to the relaxed, slow-paced, leisurely atmosphere of the turn of the century. Note the graceful, flowing lines of the artfully sculpted statue that was characteristic of the quality craftsmanship of the European immigrants. Fountains like this one supplied a thirsty public with cool drafts of crystal-clear spring or pure well water on sunny afternoons.

(Bad old days). This fountain, located in the middle of a dirt highway later known as Kilbourn Avenue, is an example of the poor public hygiene practices of the turn of the century. Horses, birds, dogs, as well as people, drank and washed themselves in this public germ spreader. People all drank from the same filthy communal drinking cup. It was not known for years that fountains such as this one and the public drinking cups used with them were transmission vehicles for tuberculosis, smallpox, and other dreaded diseases which tore at the heart of the community by exiling infected people to isolation, or to convalescent hospitals for extended terms. Most people struck down and killed by tuberculosis were between the ages of 18 and 30.

Some narratives were longer than others, but for a given slide the narratives were of approximately equal length across experimental conditions. After the presentation of each slide, participants were given 15 sec to vividly imagine the scene without the accompanying narrative. Overall, participants spent a total of 32 min viewing the slides, listening to the narratives, and taking notes.

Descriptive Task

A booklet was next distributed, in which participants first described their conceptions of a day in the life of a typical Milwaukeean by indicating what this person would be doing at 1-hour intervals beginning at 6:00 A.M. when the person woke up, and finishing at midnight when the person retired to bed. Only upon completing the descriptive task were participants instructed to proceed.

Posttreatment Measures and Anchoring Manipulation

Two sets of measures were assessed after the descriptive task. The first (Present) set was identical to the pretreatment measures. The second (Past) set was similar to the Present set, but participants judged their life in terms of the quality of life prevalent in 1900. For example, the Past item corresponding to the first pretreatment measure was: "How would you feel about your life as a whole if

it were similar in quality to that of a typical Milwaukeean living in 1900?" The questions were introduced as a way that the researchers might better understand participants' conceptions and feelings regarding life in Milwaukee.

In the unanchored sequence, participants first completed the 13 items in the Present set before responding to those in the Past set. In the anchored sequence, participants completed the first item in the Past set before completing the first item in the Present set. The remaining items were presented in this alternating fashion.

Debriefing

After completing their ratings, participants were informed that for experimental purposes, a balanced historical description had not been presented and that four volumes depicting life in Milwaukee in 1900 had been placed on reserve at the library. Participants were encouraged to approach the experimenter if they had any questions they wanted immediately answered and to contact the first author if they had questions later. Finally, participants were asked not to discuss the study with others. After the data had been analyzed, a complete description of the study and the findings was mailed to all participants.

Results

Manipulation Check

Responses were averaged across the 13 Past items to form an index of the judged quality of life in 1900 (coefficient alpha, based on the pooled within-cell covariance matrix, was .91). A univariate Hedonic \times Anchoring Condition analysis of variance revealed only a reliable hedonic main effect, $F(1, 69) = 181.11$, $p < .0001$. Participants in the good old days condition indicated that if their present lives were similar in quality to the life portrayed, they would feel on the average "mostly satisfied" ($M = 45.4$), or about 11 points above the scale midpoint (34), whereas those in the bad old days condition would feel "unhappy" ($M = 15.1$), or about 19 points below the scale midpoint. These findings are consistent with the assumed hedonic value of the stimulus materials, as illustrated by the location of the materials on the utility scale in Figure 1 and the check marks on the accompanying rating scales.

It is also important to note that univariate analyses of variance for each item in the Past set revealed reliable hedonic effects ($p <$

Table 1
Average Judgments of Present Life Quality—Composite

Condition	<i>n</i>	Pre-treatment	Post-treatment	Difference	<i>F</i> (1, 69)	<i>p</i>
Unanchored						
Good old days	19	39.7	39.7	.0	.00	1.00
Bad old days	18	38.5	41.0	2.5	3.49	.07
Anchored						
Good old days	18	39.7	37.9	-1.8	1.78	.19
Bad old days	18	39.1	44.9	5.8	18.56	.00005

Note. Scores range from 1 (Terrible), through 34 (Mixed), to 67 (Delighted).

.0001) generally consistent with the overall index. The major exception was for evaluations of the fire department, in which the evaluations in the good old days condition ($M = 32.4$), although more positive than those in the bad old days condition ($M = 10.4$), were just below the scale midpoint. Finally, it is important to note that the seven largest F ratios were detected for the personal health, police and courts, food, elected officials, physical environment, public spirit, and human relationship items.

Major Analyses

Life quality composite. Responses were averaged across the 13 pretreatment items (coefficient alpha = .70) and the 13 post-treatment items (coefficient alpha = .81) to form indexes of present life quality. These composites are presented in Table 1. Analysis of pretreatment-to-posttreatment differences revealed a hedonic main effect, $F(1, 69) = 14.12$, $p = .0004$, as well as a Hedonic \times Anchoring interaction trend, $F(1, 69) = 3.62$, $p = .06$. The test for the anchoring main effect was not reliable ($p = .56$).

The reliable hedonic main effect is due to pretreatment-to-posttreatment change in evaluations being more positive in the bad ($M = 4.2$) than in the good ($M = -.9$) old days conditions. This finding corroborates the most general comparison level prediction. Furthermore, the more specific hypothesis of greater positive contrast in the bad old days condition than negative contrast in the good old days condition was also corroborated. Inspection of the tests in Table 1 for pretreatment-

to-posttreatment simple effects explicitly reveals that the positive contrast hypothesis was weakly corroborated in the unanchored bad old days condition ($p = .07$) and strongly corroborated in the anchored bad old days condition ($p = .00005$). Negative contrast, that judgments would decline in positivity after participants were exposed to the good old days information, was, however, detected in neither the unanchored ($p = 1.00$) nor the anchored condition ($p = .19$). The Hedonic \times Anchoring interaction trend is, as predicted, due to the difference between the good and bad old days conditions being more enhanced when judgments were anchored (the difference is 7.6) than when they were unanchored (2.5).

Individual items. To investigate whether all items were uniformly influenced by the treatments, pretreatment-to-posttreatment difference scores were calculated for each item, and a multivariate analysis of variance was conducted.

A reliable multivariate anchoring main effect was detected, $F(13, 57) = 2.04$, $p = .03$. This effect appears to be due to evaluations of the fire department increasing in the anchored ($M = 8.8$) as compared to the unanchored ($M = 2.0$) conditions ($p < .003$).

Of greater interest, a reliable multivariate hedonic main effect was also detected, $F(13, 57) = 2.16$, $p = .02$. Pretreatment-to-posttreatment difference scores were reliably (at $p \leq .05$) more positive in the bad than in the good old days condition for all items listed in Table 2 except personal health ($p = .06$). Inspection of the Difference column in Table 2 for pretreatment-to-posttreatment

Table 2
Average Judgments of Present Life Quality—Individual Items

Item and condition	Pre-treatment	Post-treatment	Difference	<i>F</i> (1, 69)	<i>p</i>
Personal health					
Good old days	48.0	47.2	-0.8	0.26	.61
Bad old days	44.9	48.5	3.6	4.70	.03
Police and courts					
Good old days	36.4	31.7	-4.7	5.25	.02
Bad old days	33.1	35.9	2.8	1.81	.18
Quality of food					
Good old days	43.7	41.7	-2.0	1.15	.29
Bad old days	43.9	47.2	3.3	3.06	.08
Elected officials					
Good old days	33.8	28.3	-5.5	7.50	.008
Bad old days	33.6	33.9	0.3	0.02	.89
Physical environment					
Good old days	28.0	26.7	-1.3	0.52	.47
Bad old days	23.4	31.0	7.6	17.33	.00009
Public spirit					
Good old days	33.1	31.8	-1.3	0.48	.49
Bad old days	30.0	36.2	6.2	10.86	.002
Human relationships					
Good old days	37.0	32.2	-4.8	3.97	.05
Bad old days	34.9	43.4	8.5	12.14	.0009

Note. Scores range from 1 (Terrible), through 34 (Mixed), to 67 (Delighted).

changes in judgments reveals that, generally, evaluations tended to decrease in the good old days condition and increase in the bad old days condition. Furthermore, inspection of the *F* ratios indexing these changes suggests that, generally, increments in judgments (positive contrast) in the bad old days condition tended to be larger than decrements (negative contrast) in the good old days condition.

The hedonic main effect and pretreatment-to-posttreatment simple effect findings described above are consistent with the analyses reported for the composite. The multivariate test for the Hedonic \times Anchoring interaction was, however, not reliable, $F(13, 57) = 1.49$, $p = .15$.

Discussion

Life Quality Composite

Comparison level theory most generally implies that pretreatment-to-posttreatment changes in judgments should be more positive

in the bad than in the good old days condition. This is precisely what was detected, as indicated by the reliable test for the hedonic main effect, when pretreatment-to-posttreatment differences for the composite were analyzed. Furthermore, it was hypothesized that contrast effects would be greater in the bad than in the good old days condition. This is precisely what was detected, as indicated by the tests for pretreatment-to-posttreatment simple effects reported in the last two columns of Table 1. It must be noted, however, that whereas these tests are consistent with a more precise contrast hypothesis, the comparisons must be interpreted cautiously because of the absence of a no-treatment control group.

The results for the composite also support the hypothesis of greater contrast in the anchored than in the unanchored condition, although the test was just short of being reliable at conventional levels of significance. This finding is similar to that reported by Pepitone and DiNubile (1976), who detected

contrast only when judgments of an initial stimulus in a two-stimulus "sequence were 'anchored,' that is overtly recorded and thus publicly committed" (p. 448). It is not clear, however, on the basis of either study, which aspects of such anchoring manipulations are necessary for producing contrast. Whereas Pepitone and DiNubile have stressed public commitment, according to comparison level theory, merely requiring participants to judge *but not publicly record initial judgments* should be sufficient to induce or enhance contrast, by virtue of increasing the salience of the hedonic value of the prior stimulus.

Individual Items

The contrast hypotheses were corroborated for 7 of the 13 life quality items. The pattern of reliable hedonic effects for the set of items appears clearly due to differential manipulation of aspects of life. Those aspects of life along which the general contrast hypothesis was corroborated were those most strongly manipulated.

Finally, it will be recalled that a reliable anchoring effect was detected for the fire department item. This finding, that evaluations of the fire department increased more in the anchored than in the unanchored conditions *across* levels of the hedonic factor, can be reconciled with adaptation level theory if not with comparison level theory.² Recall that the manipulation check pertaining to the efficiency of the fire department indicated that evaluations were often below the scale midpoint in the good old days condition and even more so in the bad old days condition. The net result in either hedonic condition was to increase the salience of how bad the fire department was in 1900. In the anchored conditions, the manipulation checks were collected before the evaluation of the fire department's present efficiency, and thus, greater salience and positive contrast would be expected in this condition.

Theoretical Implications

The present findings, although corroborating comparison level theory, suggest that the theory may not be sufficiently refined to ade-

quately represent the complexities of evaluative judgment. Upshaw (1969) has emphasized an important theoretical distinction between comparison and adaptation level theories. Although outcomes might differ in their specifics, according to comparison level theory, all outcomes are judged in terms of a single utility scale such that "a nagging wife, a 10% salary raise, and a slice of apple pie are all evaluated in terms of a single CL [comparison level]" (pp. 347-349). This conception of the comparison level as a generalized hedonic standard of judgment would imply that contrast effects should have been detected, within the limits of experimental error, across all 13 measures of life quality. As indicated, however, the general contrast hypothesis was corroborated for only 7 of the measures. (The differential impact of the hedonic manipulation upon the measures is not due to differential experimental error.)³ According to an adaptation level model of judgment, there is a different reference scale for each aspect of life, with each scale having a particular adaptation level (Upshaw, 1969, p. 347). This model of judgment is consistent with the finding that the strongest contrast effects were observed along those dimensions that were most strongly manipulated, and the anchoring main effect detected for evaluations of the efficiency of the fire department.

Experiment 2⁴

In Experiment 2, we attempted to constructively replicate Experiment 1 by essentially following Abraham Maslow's (Maslow, 1972) suggestion regarding exercises in deprivation:

All you have to do is to go to a hospital and hear all the simple blessings that people never before realized *were* blessings—being able to urinate, to

² Upshaw (1969) has distinguished between adaptation and comparison level models of judgment. This distinction is presented in the next section.

³ These error terms are for the analyses of pretreatment-to-posttreatment difference scores.

⁴ Special thanks are due Margaret Grade and Betty McMackin for help in conducting this experiment and Carol Schultz for her extensive assistance in collecting and developing stimulus materials.

sleep on your side, to be able to swallow, to scratch an itch, etc. Could *exercises* in deprivation educate us faster about all our blessings? (p. 108)

Women who had completed pretreatment measures earlier in the semester were asked to imagine vividly a series of events. In the hedonically negative condition, the events were personal tragedies, whereas in the comparison condition the events were all positive. After imagining *each* event, participants described what they would do, think of, and feel. Later, they expressed their level of satisfaction with various aspects of life, including their life in general, health, and physical appearance, on scales identical to the pretreatment measures.⁵ Given the results of an earlier experiment (see Footnote 5), and given that the latter aspects of life appeared a priori to be most strongly manipulated across conditions, it was predicted that on a composite of these measures, pretreatment-to-posttreatment changes in evaluation would be more positive in the hedonically negative than in the hedonically positive condition. This prediction, of course, is analogous to the general contrast prediction, which was strongly corroborated in Experiment 1 and was the major hypothesis tested in the study.

Participants also described their moods. According to a simple affective model of evaluation, the positivity of evaluative responses should covary directly with the positivity of affective states (Byrne, 1971, chapter 13). Both comparison and adaptation level theories, however, suggest that evaluations on the composite index would be most positive in the hedonically negative condition. The mood descriptions also served as a manipulation check.

Method

Participants

Eighty-three women enrolled in introductory psychology at the University of Wisconsin—Milwaukee participated in the experiment in exchange for extra credit in their courses. Women were again selected as a matter of convenience.

Pretreatment Measures

At the beginning of the semester, a survey was distributed that included a series of questions re-

garding the respondent's satisfaction with her life, health, physical appearance, relations with other people, sex life, and financial situation. Respondents answered each question by placing a check mark *anywhere* along the following rating scale:

1.....	2.....	3.....	4.....
Excep- tionally dissatisfied	Very dissatisfied	Dissatisfied	Slightly dissatisfied
.....			
5.....	6.....	7.....	8
Slightly satisfied	Satisfied	Very satisfied	Excep- tionally satisfied

Responses to this 71-point scale were assigned integers from 10 (Exceptionally dissatisfied) to 80 (Exceptionally satisfied). Those women whose ratings were between 30 and 65 were invited to participate several weeks later and were randomly assigned to conditions. (Several women participated although they had not completed the "sex life" question.)

Procedure

Participants were run in small groups ranging in size from two to seven persons and responded independently to the materials. Each session lasted about 2 hours. All instructions and questions were contained in a single booklet.

Instructions. At the beginning of each session, participants were informed that they would be asked to read and respond to a series of articles and that their responses would be confidential. It was also explained that at any time they could decline to answer a question or participate further, but would receive full credit toward their psychology course.

Participants were told that the ability of people to vividly imagine "life events" was being studied. They anticipated reading a series of life events,

⁵ Before the present series of experiments had been conducted, a study conceptually similar to Experiment 2 had been run (Fisher, 1976). Women role played either being slow walkers or having been in an automotive accident and confined to wheelchairs for the rest of their lives. After traveling about campus for an hour and discontinuing role playing, participants in the hedonically negative condition tended to express more positive judgments on a composite index of satisfaction with life, health, and physical appearance than participants in the control condition. For various methodological reasons (e.g., the absence of pretreatment measures and some participants failing to comply with the role-playing instructions) the difference between conditions was not reliable, $F(1, 78) = 1.65$, $p = .10$, directional alternative. We believed the findings to be suggestive, however, and consequently designed a more precise study—Experiment 2.

imagining the events happening to themselves and describing their reactions to the events.

Life events. In the hedonically negative condition, participants successively imagined (a) that they were severely burned and permanently disfigured—especially their face and hands—as a consequence of a gas explosion that destroyed their home or apartment and killed someone they dearly loved; (b) that they were blind; (c) that they were in an automobile accident that resulted in their confinement to a wheelchair for the rest of their lives; and (d) that they were severely suffering from Hodgkin's disease, a cancer of the lymphatic system that most often attacks young adults. In the hedonically positive condition, participants successively imagined that they were (a) winners of an all-expenses-paid tour for themselves and a friend to southwestern Europe and Morocco; (b) multimillionaires who with their loved one enjoyed a spectacular world cruise on the Queen Elizabeth 2; (c) well-paid private secretaries who travelled through northeastern Europe with their wealthy employer; (d) and winners of an all-expenses-paid vacation of their own design, for themselves and a friend, in Missouri.

To stimulate participants' imaginations, in the negative condition women read appropriate articles from the medical and rehabilitation literature, whereas in the positive condition they read travel brochures. Participants could not proceed to a new life event until they had read and described their reactions to earlier life events.

Posttreatment Measures

Upon completing the last life event, subjects were told that the role-playing task was over and that additional information was being collected to better understand responses. Participants first described how they felt while role playing, by completing the Nowlis (1970) Mood Adjective Check List. Later, they described their satisfaction with the six aspects of life assessed at the beginning of the semester, on identical rating scales. Participants then completed a second set of mood scales to describe their current mood. The last question in the booklet asked participants to describe anything that might help the researchers understand participants' responses. This question was included generally to enhance an understanding of the effects of the treatment and to check for experimental demand. Although many women wrote extensively, especially in the hedonically negative condition, no one indicated knowledge of any of the hypotheses being investigated.

Debriefing

After the data were analyzed, a complete description of the study and the findings was mailed to all participants. Those wishing additional information were invited to discuss the study with the researchers.

Table 3
Average Mood Scores as a Function of Experimental Condition and Phase

Factor	Condition		Univariate hedonic tests, $F(1, 81)$
	Hedonically negative ($n = 42$)	Hedonically positive ($n = 41$)	
During role-playing task			
Elation	5.2	9.8	55.82
Anxiety	7.8	4.7	39.05
Sadness	7.8	4.4	45.86
After satisfaction ratings			
Elation	6.3	6.3	0
Anxiety	5.9	4.1	13.15
Sadness	5.3	3.9	10.85

Note. High scores indicate greater elation, anxiety, and sadness. The range of possible scores for elation is 4 to 16, and for the remaining factors is 3 to 9. All nonzero F statistics are reliable at $p < .002$.

Results

Manipulation Check

Multivariate analyses of variance for mood during the role-playing task, $F(3, 79) = 34.40$, $p < .0001$, and after the satisfaction ratings were made, $F(3, 79) = 5.09$, $p < .003$, indicated reliable hedonic effects. As indicated in Table 3, participants' reports of mood were generally more negative in the hedonically negative than in the hedonically positive condition.

Major Analyses

Satisfaction composite. The three satisfaction measures hypothesized to be most influenced by the treatments were averaged to form a composite (the alpha coefficients for the pretreatment and posttreatment indexes were, respectively, .52 and .59). An analysis of variance of pretreatment-to-posttreatment differences revealed, as predicted, greater positivity in judgments of satisfaction in the hedonically negative than in the hedonically positive condition, $F(1, 81) = 3.32$, $p < .04$, directional alternative. As indicated in Table 4, participants' judgments of satisfaction increased an average of 4.9 points in the hedoni-

Table 4
Average Judgments of Satisfaction

Variable	Pre-treatment	Post-treatment	Difference	$F(1, 81)$	p
Hedonically negative condition ($n = 42$)					
Composite	53.6	58.5	4.9	20.37	.00002
Life	55.0	61.1	6.1	18.78	.00004
Health	54.3	61.2	6.9	15.96	.0001
Physical appearance	51.4	53.2	1.8	1.77	.19
Hedonically positive condition ($n = 41$)					
Composite	53.8	55.9	2.1	3.65	.06
Life	55.0	56.3	1.3	0.83	.36
Health	55.3	57.8	2.5	2.04	.16
Physical appearance	51.0	53.6	2.6	3.61	.06

Note. Scores range from 10 (Exceptionally dissatisfied), through 45, the midpoint, to 80 (Exceptionally satisfied).

cally negative condition but only 2.1 points in the positive condition. The tests for pretreatment-to-posttreatment simple effects, in the last two columns of Table 4, reveal the hedonically negative condition to be associated with the largest increment in evaluations.

It will be recalled that according to a simple affective model of evaluation, the positivity of evaluations increases with the positivity of affective states. The present findings contradict this model, since judgments of satisfaction were most positive in the hedonically negative condition. Nor does it appear that the positivity of evaluative responses increases with changes toward more positive affective states. According to such a revised model, the participants in the hedonically negative condition judged their lives most positively because of the affective "relief" resulting from the termination of the role-playing task. Contrary to the revised model, as participants' moods in the hedonically negative condition decreased (from first to second assessment) in terms of sadness and anxiety, their pretreatment-to-posttreatment changes in judged satisfaction, on the composite, also decreased, $r(40) = .34$, $p < .05$, for sadness; $r(40) = .30$, $p < .06$, for anxiety. Changes in relation did not covary ($r = -.01$) with changes in the composite.

Individual items. For each item, pretreatment-to-posttreatment difference scores were

calculated. The omnibus multivariate hedonic test was reliable, $F(3, 79) = 2.65$, $p = .05$, as were the univariate tests for satisfaction with life, $F(1, 81) = 5.63$, $p < .01$, directional alternative, and health, $F(1, 81) = 3.23$, $p < .04$, directional alternative. As indicated in Table 4, pretreatment-to-posttreatment increments in judged satisfaction with life and health were greater in the hedonically negative than in the hedonically positive condition. The weak trend for judgments of satisfaction with physical appearance is contrary to that hypothesized and, of course, is not reliable, using a directional statistical decision rule, $F(1, 81) = .15$.

Similar analyses of pretreatment-to-posttreatment change were conducted for judgments of satisfaction with relations with other people and financial situation. Whereas the means for the relations item were in the direction specified by comparison level theory, $F(1, 81) = 2.00$, $p < .08$, directional alternative, the means for the financial item were in the opposite direction, $F(1, 81) = .02$. Furthermore, although the absence of pretreatment measure scores for some participants precluded a pretreatment-to-posttreatment analysis of satisfaction with sex life, the posttreatment means were also opposite to what would be expected if the comparison level, $F(1, 81) = .71$, were a generalized standard.

*Discussion**Satisfaction Composite*

The finding that pretreatment-to-posttreatment changes in judgments of satisfaction were reliably more positive in the hedonically negative than in the hedonically positive condition corroborates the major prediction derived from comparison level theory. Furthermore, it is interesting to note that as in Experiment 1 (bad old days condition), the hedonically negative condition was associated with the largest increments in evaluations. Although the stimulus material was not judged by participants in terms of hedonic value (as in Experiment 1), the greater potency of the hedonically negative material may have resulted from its departing more from participants' pretreatment comparison levels than did the hedonically positive information.

The findings for the satisfaction index do not appear to corroborate Byrne's (1971) affective model of evaluation, since judgments of satisfaction were greatest in the most affectively negative condition. Obviously, more research is needed to delimit the generally accepted positive relationship between affective states and evaluations.

Individual Items

The contrast hypothesis was corroborated for two—life and health—of the three items comprising the satisfaction composite. Evaluative judgments of physical appearance were virtually uninfluenced, although the within-cell experimental error for this item (see Footnote 3) was slightly smaller than the error associated with the items yielding reliable contrast effects. Furthermore, it will be recalled that satisfaction regarding three aspects of life besides the composite items were measured and analyzed, but contrast effects were not generally detected. Although comparison level theory may be of heuristic value, these findings do not appear consistent with the assumption that all outcomes are judged in terms of a single utility scale and standard—the comparison level.

General Discussion

Summary of Major Findings

These experiments corroborate the hypothesis that vicarious exposure to hedonic extremes—especially the hedonically negative—results in contrast effects regarding evaluative judgments of aspects of life that have evolved or been acquired in the course of life *beyond* the laboratory. Although the present results are generally consistent with comparison level theory, the findings appear better described by an adaptation level model of judgment (Upshaw, 1969, p. 347). Furthermore, the finding that the hedonically negative condition of Experiment 2 was associated with the most negative moods, but the most positive judgments, appears to contradict Byrne's (1971) affective model of evaluation.

Potential Limitations

Participant sex. Although only women participated in the present studies, the findings should hold for males, since contrast effects have been detected with males in other studies (e.g., Brickman, 1975).

Treatment complexity. The treatments used in the present experiments were complex. It is, therefore, not precisely known which aspects of the treatments—especially the hedonically negative treatments—mediated effects. Clearly, participants were not merely exposed to stimuli. For example, across both experiments, participants described reactions to the stimulus materials before evaluating aspects of life.

Magnitude of effects. In relation to the maximum contrast effects that could be detected in these experiments, the effects of the hedonically negative materials, though statistically reliable, were small. A number of considerations are relevant to this result:

1. Several participants indicated that the hedonically negative materials had created a conflict. On the one hand, they were inclined to increase the positivity of their judgments, yet they felt that this was inappropriate, since their judgments were typically not so positive. These participants reported expressing their more typical judgments on the post-

treatment measures, thus hindering the detection of large contrast effects.

2. In designing these experiments, it was assumed that most participants had not been extensively or recently exposed to hedonically negative information and that the hedonic value of such information consequently was substantially below participants' pretreatment comparison levels. These considerations would suggest the production of large contrast effects. According to Thibaut and Kelley (1959), however, the weights associated with the comparison level reflect the "salience" of outcomes, where "salience" refers to the extent that an individual might think about outcomes before judgment. But, as illustrated by the mood ratings in Experiment 2, hedonically negative outcomes may have immediately aversive properties. Thinking, for example, of injury, disease, or death generally elicits aversive emotional responses, amounts to self-punishment, and may therefore ordinarily be avoided.⁶ Consequently, the salience and weighted contribution of the hedonically negative to the comparison level may be small.

3. Strictly speaking comparison and adaptation levels are weighted averages. The determinants of values and weights, however, have not been precisely specified. Although exposure to hedonically negative information for more than an hour, as in Experiment 2, may appear substantial, the contribution to comparison or adaptation levels may be small, since these constructs reflect all of a participant's previous experience.

Beyond the Hedonically Positive

Psychologists appear, in general, to have assumed that individuals are primarily oriented towards the hedonically positive when making assessments, although the psychological basis for this assumption has not always been specified. Festinger (1954) made this assumption for the assessment of abilities when he postulated that individuals compare themselves with those performing better. Numerous research instruments involve a comparison between a respondent's description of his or her present status and "ideal" status, and the concept of relative deprivation, of

course, depends upon an individual not having that which he or she desires (see Cook, Crosby, & Hennigan, 1971). But if our theories are general, they should also explain when and how the hedonically negative may influence judgment. The young students we most often study may be bombarded with advertisements rendering the hedonically positive salient, and they may believe that they will always be healthy and their outcomes constantly improving; but as theorists we should not be blinded by these aspects of our culture.

Thibaut and Kelley (1959) attempted to specify a psychological theory of outcome salience in proposing that salient outcomes are those that an individual believes he or she can to some degree control. Since vicarious exposure to the hedonically positive may provide information about response-positive reinforcement contingencies (see Berger, 1977) and consequently mediate positive reinforcement, it is not surprising that individuals may attend to those achieving more positive outcomes and think about these activities and subsequent outcomes. Such behavior may momentarily decrease judgments of satisfaction with current outcomes but may mediate more positive future outcomes. Eventually, however, there may be little or no possibility of achieving the hedonically positive! This may be true, for example, because of injury, disease, old age, or social constraints. Under these circumstances, the hedonically negative may become salient even though it may

⁶ Several months after Experiment 2 was completed, but before debriefing, we contacted participants by telephone and solicited their reactions to the experiment. The participants in the hedonically positive condition appear to have had some trouble recalling the experiment and generally did not express much interest in it. The participants in the hedonically negative condition, however, appeared to have little trouble recalling the study, thought participation was a valuable experience, and were eager to learn more about the study. Although thinking about the hedonically negative was aversive, the participants almost without exception deemed the experience valuable. Several participants reported being happier with their lives a few days after participation. One participant, however, reported discerning the major hypothesis the day following the experiment.

momentarily elicit aversive emotional behavior. The hedonically negative may provide information about response-negative reinforcement contingencies and thus facilitate an individual's avoiding outcomes far more aversive than those immediately resulting from vicarious exposure to, or thinking about, the hedonically negative. And, of course, as illustrated in the present experiments, such information would be expected to enhance judgments of satisfaction with present life outcomes.

Finally, it is interesting to note the applied implications of the present experiments. The students in Experiment 1 do not appear to have had much knowledge of the plight of the masses and the details of day-to-day life in earlier times. American historians only as recently as the 1960s have come to write history from the "bottom up" (see Thernstrom, 1964), although they were long aware that history has ordinarily been written and taught from the perspective of the bourgeoisie and aristocracy. The current findings suggest that it might be beneficial to incorporate descriptions of the lives of ordinary people into primary and secondary history curricula. Certainly 19th-century novelists have provided graphic descriptions. To paraphrase Sir Walter Raleigh, one may learn to be appreciative from comparing people's forepast miseries with one's own like errors and ill deservings. Similarly, the results of Experiment 2 suggest that we might more likely count our blessings if we were not so isolated from the hedonically negative.

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