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Jackie Snell, San Jose State University
Brian J. Gibbs, Stanford University
Carol Varey, University of Waterloo

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Jackie Snell
Department of Marketing
San Jose State University

Brian J. Gibbs
Graduate School of Business
Stanford University

Carol Varey
University of Waterloo

Consumer beliefs about influences on liking are explored. Questionnaires were administered to explore the extent to which respondents' implicit beliefs resemble any of six concepts established in experimental psychology. Results indicate respondents apply beliefs consistent with classical conditioning and Weber's law and expect adaptation to occur in a wide variety of situations. They do not show a general belief in cognitive dissonance effects. They probably do not believe in affective opponent processes (rebound) or the ability of exposure alone ("mere exposure") to increase liking, although the beliefs they do apply predict the same outcome in some contexts. Implications for consumer behavior are discussed.

What do consumers know about the dynamics of liking, and are their beliefs consistent with what is known in the psychological literature? What implicit theories do consumers use when judging how various situations will influence their likes and dislikes? For example, in judging the worth of a 10-day versus a 14-day vacation, consumers' beliefs about the principle of adaptation are critical: If they believe in adaptation, they should expect decreasing enjoyment and be unwilling to pay much for the incremental 4 days, whereas if they

Requests for reprints should be sent to Jackie Snell, Department of Marketing and Quantitative Studies, San Jose State University, One Washington Square, San Jose, CA 95192-0069 or to Brian J. Gibbs, Graduate School of Business, Stanford University, Stanford, CA 94305-5015.
believe in sensitization, they should expect increasing enjoyment and be willing to pay a relatively high price for the incremental 4 days. Although the study of common-sense psychology (Kelley, 1992) has most often focused on social situations, we investigate what we term intuitive hedonics, the part of common-sense psychology regarding the dynamics of pleasure. Intuitive hedonics includes beliefs about the formation of, and factors influencing, a broad range of subjective responses including enjoyment, liking, and affect. Despite a growing interest in hedonics among consumer researchers (Batra & Ray, 1986; Edell & Burke, 1987; Hirschman & Holbrook, 1982; Holbrook & Hirschman, 1982; MacDonald & Douthitt, 1992; Mano & Oliver, 1993; Murry, Lastovicka, & Singh, 1992; Oliver, 1993; Westbrook & Oliver, 1991; et al.), consumer beliefs about the dynamics of pleasure have not been studied.

Recently Friestad and Wright (1994) examined consumer beliefs about persuasion and suggested ways those beliefs might interact with persuasion attempts. In a similar vein, we believe that intuitive hedonics can be an important factor affecting choice. Kahneman and Snell (1990, 1992) suggested that consumer choice be viewed as a prediction of one's own likes at the time of consumption, and March (1978) suggested that rational choice requires two guesses, the first about uncertain future consequences and the second about uncertain future preferences.

Because we are not so much interested in the theories people espouse as in the beliefs they actually apply, the approach we have adopted is to infer the beliefs people use by analyzing their responses to hypothetical, everyday-life situations. Like McCloskey (1983) and diSessa (1983) did in studies of intuitive physics, we developed natural situations that allow for comparison of lay beliefs with those embodied in established theory. Scenarios were designed to describe situations that were natural yet similar to experimental situations in six areas of psychology that bear on liking or enjoyment: classical conditioning, Weber's law, opponent processes, adaptation or habituation, mere exposure, and cognitive dissonance. We attempted to be comprehensive within the constraints that (a) theories clearly apply to hedonic response, (b) there be reasonable consensus in the literature about each phenomenon, and (c) the theories not overlap too greatly (e.g., of cognitive dissonance theory and self-perception theory, we chose only one—cognitive dissonance). To minimize unique contextual effects, before inferring a belief we required that a concept be applied across at least three (and in most cases more) scenarios describing quite different contexts.

There are a number of approaches one might take to explore consumer beliefs or knowledge. Each has weaknesses as well as strengths. Other approaches that have been used and that we consider valuable complimentary approaches to ours include asking people directly what they believe, asking people what they do (Casey & Rozin, 1989), and asking people to predict the
results of specific experiments (Armstrong, 1991; Milgram, 1975; Nisbett & Borgida, 1975; Wolosin, Sherman, & Cann, 1975). We have chosen not to ask respondents for explanations but simply for predictions of the outcome of particular situations. People often either do not know or cannot articulate reasons and may be facile at giving explanations even when they have no particular insight into their mental processes (Maier, 1931; Nisbett & Wilson, 1977). Others have noted that popular aphorisms frequently contradict one another, for example “absence makes the heart grow fonder” versus “out of sight out of mind” (Furnham, 1988). People may well espouse both beliefs, leaving us wondering exactly how and when they use those beliefs. Although predictions may not capture all of a consumer’s knowledge, we focus on forced-choice predictions because they indicate accessibility and applicability of mental models to choice situations. By asking people to predict the outcome of particular situations, we access the beliefs people use in particular situations.

SURVEYS

Subjects and Procedure

Surveys 1 through 5 were administered to 337 students in a public area on the campus of a major California university. Questionnaires were kept short, 9 to 28 scenarios, to avoid fatigue and careless answers. Respondents were paid $1.00 or $1.50, depending on the length of the questionnaire. Sample size for each questionnaire ranged from 55 to 77. No effects for gender were found on Surveys 1 through 3, and subsequent surveys did not ask for this information.

Surveys 6 and 7 recruited about equally from three sources: passers-by at a public campus location, paid volunteers from an undergraduate business course, and volunteers from a psychology class intended primarily for nonpsychology majors who participated for class credit. Scenarios were divided into two questionnaires to avoid fatigue and careless answers. Each questionnaire was administered in two versions, with questions framed as “who is more (less)” happy, irritated, and so forth (see Direction of Comparison section). Thus, a total of four questionnaires (Survey 6, more and less versions, and Survey 7, more and less versions, 43 < n < 46 each) were randomly assigned to 175 students.

Interestingly, when people do guess the outcome of experiments, the academic community tends to be more interested in the possibility of demand effects than in the fact that lay people may know about human, or their own, behavior (Shimp, Hyatt, & Snyder, 1991).
Questions

Two styles of questions were used in Surveys 1 through 5. In some scenarios respondents were asked which of two individuals, who were described as being identical in every way except those mentioned, felt more or less pleasure, was more or less irritated, and so forth. For example,

D and J both live close to a major highway. The noise from the highway is sufficient to be annoying to a weekend visitor, and the noise level is the same for D and J. The section passing D's house was opened a year ago. The section passing J's house was opened last week. D and J are now each dining at home. Who is more annoyed by the noise?

Character labels D and J were randomized across scenarios so that the theory-consistent response varied. Respondents were reminded that D and J were to be viewed as identical in all respects not mentioned in the scenario.

In other scenarios, respondents were asked to imagine themselves in a particular situation and were then asked whether, for example, their sense of well-being, irritation, and so forth was increasing or decreasing. For example, "Imagine that you moved recently to an apartment near a noisy highway. Is your irritation at the noise increasing or decreasing?"

All scenarios in Surveys 6 and 7 were of the style asking respondents to choose character D or J as happier, more irritated, and so forth. Character labels D and J were randomized across scenarios so that the theory-consistent response varied. Each page of the questionnaires reminded respondents that D and J are similar in all respects not mentioned in the scenario and that D and J are not the same people from one question to the next. See Appendix A for the wording of all scenarios.

Measures

Four measures were used to look for converging evidence regarding a belief. The primary measure was agreement.

Agreement. This measured the percentage of respondents agreeing with (i.e., answering consistent with) the psychological concept. This measure was used for all surveys (1 through 7). When a very high proportion of respondents choose the answer consistent with the psychological concept, across all scenarios relevant to that topic, we can conclude that a similar concept is embodied in their intuitive beliefs.

When there is little agreement among respondents on the outcome of a scenario, it is difficult to determine whether participants are simply divided in what they believe or whether they have little or no intuition about the situation
and are guessing. To aid in interpreting such situations, we used three additional measures in Surveys 6 and 7.

**Within-Subject Consistency.** This measured the proportion of individuals who answer consistently with the psychological concept on all questions relevant to a topic on their questionnaire. When agreement levels are very high, within-subject consistency must also be high. When agreement is low, a high level of within-subject consistency suggests divergent beliefs, whereas low within-subject consistency suggests guessing.

**Direction of Comparison.** As a test of the robustness of beliefs, agreement levels were reported for two versions of each scenario. Half of the questionnaires asked, for example, “who likes ——— more?” The other half asked “who likes ——— less?” When no strong intuitions exist, answers may be influenced by the wording of the question (Grice, 1975). d’Arcais (1970) showed that “less than” comparisons are often more difficult than “more than” comparisons, so we expected to find somewhat less agreement in the less version, but if a belief is strong we should find answers tending in the same direction, regardless of the way the question was asked.

**Estimated Consensus.** To measure whether respondents believe their opinions are widely accepted, they were asked to estimate how many respondents out of 100 would agree with their response. In essence, this asked whether they think their own belief reflects a lay theory. We also interpreted estimated consensus as an indirect indication of strength of belief due to the so-called *false consensus* effect (Ross, Greene, & House, 1977; but see Dawes, 1989; Suls & Wan, 1987; and Valins & Nisbett, 1972, for other views). In general, we expected that respondents would estimate a majority to agree with their response when their own intuition was clear but would predict little consensus among their peers when they themselves were guessing.

For simplicity and clarity the remainder of this article is reported by topic area. We first cover topics that we feel most confident in reporting that people use, followed by the areas for which our results are more complex. Finally, we cover cognitive dissonance, the only concept that respondents clearly do not apply.

**CLASSICAL CONDITIONING**

Classical conditioning refers to the “process of using an established relationship between a stimulus and response to bring about the learning of the same response to a different stimulus” (Hawkins, Best, & Coney, 1992, p. 246). This characterization is typical of contemporary consumer behavior text books...
(although there remain a number of unresolved issues concerning the details of classical conditioning; see Klein & Mowrer, 1989). Experimental demonstrations of classical conditioning usually involve measurement of behavior, but there is also empirical evidence that attitudes can be conditioned (Stuart, Shimp, & Engle, 1987). Because we are primarily interested in beliefs about liking, we asked respondents directly about affective responses.

Scenarios

In our surveys, we asked respondents to decide which of two characters would currently like a particular stimulus more, given that this stimulus had been associated with different events in each character’s past. Situations included a jingle that was associated with a disliked job versus with Saturday football games; a jingle associated with arriving at versus leaving a disliked job; flowers that were or were not associated with bad behavior on the part of a character’s past boyfriend; and a van Gogh print that was associated with a dentist’s office versus with an ice-cream parlor (see Appendix A, Nos. 1–4). A belief in classical conditioning is indicated if respondents think the currently happier character is the one whose experience with the focal stimulus involved the more pleasant past events.

Results

All measures on this topic converged to strongly support the claim that respondents believe in and apply classical-conditioning concepts. The classical-conditioning topic shows consistently high levels of agreement among respondents (mean agreement with the classical-conditioning answer = 85%, range = 74%–95% across seven questions, n = 43–74; see Appendix B, Nos. 1–4 for detailed results. Respondents who gave the conditioning-congruent answer also thought most other respondents would agree with them (the median estimated consensus was 80%–90%, n = 43 for each). With so few votes against conditioning, within-subject consistency across scenarios was also necessarily high (74.4% of respondents answered consistently with conditioning principles across Questions 1, 3, and 4, n = 43, p < .00001). Those who did not subscribe to classical conditioning generally recognized that there would not be a strong majority agreeing with them (estimated consensus 50% < median < 60%, 2 < n < 9). Note however that sample sizes for the minority position were very small. Of course, we must acknowledge that lay beliefs may not be entirely equivalent to psychologists’ theory, because our scenarios sampled a limited number of situations.

\[^2\text{All significance levels were determined using Harvard University Computation Library (1955).}\]
WEBER'S LAW

Weber's law states that the just noticeable difference between two levels of stimulation is a constant fraction of the baseline level of stimulation (Levine & Shefner, 1991). Consequently, at high levels of stimulation, a large absolute change in stimulation must occur to be noticed, whereas at low levels of stimulation, even a small absolute change in stimulation can be noticed. For our translation into natural scenarios, detection thresholds are less important than the general notion that the psychological impact of a stimulus will be smaller when the baseline level of stimulation is larger.³

Scenarios

Our Weber's law scenarios involved money won in a lottery, money paid for a car repair or calculator, and candy bars or a vacation given for free (see Appendix A, Nos. 5–11). A belief in Weber's Law is exhibited when respondents choose the character with the lower initial level of stimulation as being happier for gains or more upset for losses. In addition, we were interested in people's beliefs about what constitutes the relevant baseline. Kahneman and Tversky (1984) and Thaler (1985) suggested that people do not base decisions on total wealth as economists advise, but rather maintain a number of mental accounts that have their own reference expenditures. This led us to vary the salience of the total expenditures made by characters across several scenarios involving purchase of a calculator or money given as a salary increase versus a bonus. For example, in one scenario (Appendix A, No. 8), there is a $5 saving on a $20 calculator versus a $100 calculator. Another version of the scenario (Appendix A, No. 9) explicitly states that both characters buy several items, including the calculator, and spend a total of $120.

Results

Our respondents quite consistently concurred with Weber across all questions (mean agreement with Weber's law = 83%, range = 76%–91% across 13 questions, n = 43–75; see Appendix B, Nos. 5–11). The effect of mental accounting was also quite strong, because it appears to be the price of an individual item rather than total amount spent that was relevant (Appendix B, Nos. 8–11). As with classical conditioning, agreement with Weber's law was equally strong regardless of how questions were phrased (i.e., who is more or less happy about the outcome). Estimated consensus was high on all six questions that asked for that measure (majority view, 80 < median < 90, n =

³This formulation, although often subsumed under Weber's law, might more accurately be attributed to Fechner (see Boring, 1950, chap. 14) or even Bernoulli (1954/1738).
43), and individual respondents were also far more consistent across Weber scenarios than should be expected by chance, in both simple (65% consistent with Weber, \(n = 43, p < .00001\), Nos. 5, 6, and 7) and mental-accounting versions (70% consistent with Weber, \(n = 43, p < .00001\), Nos. 8 and 10).

**OPPONENT PROCESSES: ADAPTATION AND REBOUND**

Opponent process theory (Solomon, 1980) states that the initial emotional response to a stimulus does not simply fade, but diminishes as the result of a counteracting, or opponent, process. This secondary process overshoots the neutral point, making a *rebound* effect observable sometime after the stimulus is withdrawn, much like a perceptual afterimage. With repetition, the opponent process kicks-in more quickly and forcefully. Three major affective phenomena are observed, corresponding to different stages of the primary and secondary processes. First, there is affective or hedonic contrast between the primary and secondary processes. Parachutists experience terror before their first free-fall, followed by elation shortly after landing. Second, frequent repetition of the unconditioned stimulus gives rise to affective or hedonic habituation (also called *tolerance* or *adaptation*). After many free-falls the parachutist no longer feels terrified before each jump. Third, as the primary process diminishes with repetition, the secondary process emerges as a long-lasting, high-amplitude affective after reaction. Experienced parachutists are claimed to have a deep sense of well-being that may last into the next day (Solomon, 1980).

**Scenarios**

We tested respondents’ beliefs in two propositions relevant to opponent processes: weakening of the primary affective response and intensification of the opponent affective response, or rebound, with repetition. We adapted examples from Solomon, including response to electric shocks, parachute jumping, drug addiction, jogging, and sauna bathing (Solomon, 1980). Electric shocks, although motivated by experiments with dogs, were written as scenarios involving an expert and a novice electrician. Solomon cited addiction to morphine, but our scenario asked about heavy versus second-time use of crack cocaine, because crack is currently topical. We used exercising on a rowing machine (regularly for several years versus regular use recently begun) instead of jogging, which is often done outdoors, to be certain that the question was clearly about exercise and not about enjoyment of nature. In addition to questions about sauna baths, we used scenarios involving a person taking cold showers regularly on the advice of a dermatologist versus one trying it for the
first time, which may be closer to the experience of many of our respondents. Primary-process scenarios asked which character feels better or feels worse during the event. Matched secondary-process scenarios compared an experienced versus novice individual later on in the day for an early morning event or the next morning after an evening event (see Appendix A, Nos. 12–24). Respondents exhibit a belief in opponent processes when they choose the character with more experience as less responsive initially and as more responsive in the opposite direction later on.

Results

Respondents very clearly expected adaptation of the primary response. Agreement with adaptation was quite high for all of the Solomon scenarios, in all wordings tested (mean agreement with adaptation = 89%, range = 74%-97% across 10 questions, n = 42–55; see Appendix B, Nos. 12–17).

We did not ask our respondents whether they had experience with parachute jumping, but we speculate that parachute jumping is likely to be the least familiar scenario for a majority of our sample. Agreement with adaptation in this scenario suggests that belief in adaptation was quite strong and not context dependent. The estimated consensus (majority view, four questions, 80% < median < 85%, n = 43 each) and within-subject consistency (79% across Nos. 15 and 16; and 84% across Nos. 13 and 17; n = 43, p < .00001 for each) measures also indicated belief in adaptation.

Intuitions about rebound, on the other hand, did not generalize across scenarios but appear to be context specific (range = 10%-93% across 11 questions, n = 43–112; see Appendix B, Nos. 18–24). For both exercise and shock, respondents believed experts would be in a better mood than novices later on. However, they believed novice parachutists would be more elated later on than experts and were quite divided about aftereffects of cold showers, saunas, and crack cocaine. Many respondents undoubtedly have had direct experience with aftereffects of exercise. Some may even be familiar with endorphins as a specific secondary-process mechanism because of recent coverage in the popular press (Carpenter-Phinney, 1988; Hopson, 1988). The even higher agreement among respondents on the subject of electric shock was surprising, however. We are unaware of comparable popular press coverage of the aftereffects of shock, and we think it unlikely that respondents have had much personal experience with shock. Perhaps respondents thought that the novice would still be experiencing the original pain later in the day.

The within-subject consistency and estimated consensus measures also did not suggest a general belief in a rebound effect concomitant with adaptation. Although there was some within-subject consistency on the questionnaire using exercise and shock scenarios (70%, n = 43, p < .00001, Nos. 18 and 19),
there was none across the cold shower and crack cocaine scenarios (26%, 25% expected by chance; Nos. 20 and 21), which perhaps lends support to the suggestion that some intuition other than opponent processes accounted for agreement on the shock question. Given the surprisingly high agreement with opponent process theory on the shock scenario, estimated consensus was relatively low (median = 75%; for comparison, median = 90% for two classical-conditioning scenarios with similar agreement). The crack and exercise scenarios showed even lower consensus estimates (median = 70% for both). These results are likely to reflect a good many low-confidence or guessing responses. On the other hand, the scenario that garnered the least agreement on this topic, cold shower, garnered the highest consensus estimates (No. 21 median = 80%), perhaps indicating two subpopulations with strongly held but divergent beliefs.

On the basis of our evidence, we conclude that there was not a general belief in secondary processes, although a belief in adaptation of the primary process seems quite strong. Given that changes in context, and even in wording, eliminated agreement among respondents on secondary effects, it is more likely, as diSessa (1983) suggested for intuitive physics, that respondents had context-driven pieces of knowledge that sometimes coincide with opponent process theory.

ADAPTATION: EXTENDED EXPLORATION

Although we conclude in the previous section that respondents showed a strong belief in adaptation, another study by one of us showed contrasting evidence. Gibbs (1992) found, in an unrelated study involving nonhypothetical experience, that subjects expected heightening sensitivity to an aversive gustatory experience. Coombs and Avrunin (1977) suggested that people adapt to good things but sensitize to bad things. We were intrigued about the generality of beliefs regarding adaptation to aversive stimuli and we explored this topic further.

Empirical evidence from the psychological literature is not clear-cut. There is little disagreement about adaptation to goods, but perhaps the larger part of the evidence suggests adaptation to bads as well. Solomon’s (1980) theory of opponent processes, for instance, seems to apply to both initially good and bad experiences, and Helson’s (1964) theory of social adaptation appears to apply regardless of the valence. Brickman, Coates, and Janoff-Bulman (1978) presented evidence for a large degree of adaptation, although perhaps not total, to life experiences as extreme as lottery winnings or being paraplegic. There is also evidence, however, that we do not adapt to what we will characterize as physically harmful stimuli, such as even moderately loud noises (Weinstein, 1982) or holding one’s hand in ice water (Hilgard et al., 1974).
Scenarios

Because Weinstein’s (1982) evidence relatively clearly indicates lack of adaptation to highway noise, we explored the belief in adaptation to noise in some depth. In addition to noise, we used research on adaptation to ice water (Hilgard et al., 1974), a low-salt diet (Beauchamp, Bertino, & Engelman, 1983), and lottery winnings and life as a paraplegic (Brickman et al., 1978) as inspiration (see Appendix A, Nos. 25–51). Pressing for the limits of belief in adaptation, we based some noise and some pain scenarios somewhat less directly on existing experiments. Respondents exhibit a belief in adaptation if they think that pain would decrease with repetition or duration, believe a noise becomes more tolerable or less irritating over time, and if they choose the character who has been on a diet longer as the one who enjoys a forbidden food less. They exhibit a lack of belief in adaptation if they choose the character who has won a lottery or become paraplegic as having more or less enjoyment or satisfaction, respectively, than a person with no extraordinary experience.

Results

Our scenarios were developed with the express purpose of seeking the limits, or boundary conditions, for belief in adaptation. With that in mind, we characterize our results as showing more belief in adaptation to aversive conditions than empirical evidence seems to warrant. When there was significant agreement among respondents, it was often in favor of adaptation, even for very disagreeable stimuli. Agreement was quite high in favor of adaptation in several versions of a question involving highway noise (mean agreement with adaptation = 89%, range = 73%–98% across five questions, n = 43 to 119; see Appendix B, Nos. 25–27). Weinstein (1982) also suggested that, contrary to what actually happens, subjects expect adaptation. Although respondents appear to believe in more adaptation for highway noise than the empirical evidence justifies, they expected sensitization for some noises such as high-pitched tones and a neighbor’s stereo and were split in their opinions for others (see Appendix B, Nos. 25–51).

Belief in adaptation to pain was quite context dependent (see Appendix B, Nos. 38–42). A majority of respondents believed one adapts to injections and sensitizes to headaches. There was no majority view regarding holding one’s hand in ice water.

Beauchamp et al. (1983) showed that subjects on a low-salt diet preferred a lower salt level to a higher level, at least by the 4th month. Our respondents seemed to be quite confused over whether one adapts to a diet regimen (range = 35%–67% agreement with adaptation across five questions). Apparent agreement with adaptation on the “more” questionnaires often disappeared or reversed on the questionnaires using “less than” phrasing, suggesting suscepti-
bility to the wording rather than belief in the concept (see Appendix B, Nos. 35–37).

Respondents did not generally believe in adaptation to extreme life situations such as winning a lottery (the only positive event in this section) or having a disabling accident. For less extreme life situations, such as traffic jams or having one’s tires slashed, there seems to be a tendency toward believing in adaptation (see Appendix B, Nos. 43–51). Interestingly, a majority of our mostly middle-class respondents appear to expect adaptation to jail, apparently categorizing jail with less extreme events. For further evidence about belief in adaptation to aversive situations see Varey and Kahneman (1992).

MERE EXPOSURE

It has been suggested that simple exposure—that is, repeated stimulus exposures with no apparent associations or learning—results in increased liking, at least when the stimulus is initially both novel and neutral. Zajonc (1968) labeled this effect mere exposure.

Scenarios

Perhaps the best known mere exposure experiments, including many of Zajonc’s own, used nonsense words or ideographs (e.g., Chinese-looking but meaningless characters) that subjects believed to be a foreign language (Zajonc, 1968; Zajonc & Rajecki, 1969). “Words” that Zajonc’s subjects had seen more often were more likely to be thought to mean something good. Abstract visual stimuli and music are also often used (Anand & Sternthal, 1991; Heingartner & Hall, 1974; for reviews see Bornstein, 1989, and Harrison, 1977). Zajonc & Rajecki (1969) ran ads of nonsense syllables in college newspapers, varying the number of exposures, and found that the more students had been exposed to the ads, the more they like them. We modeled our questions on these experiments, varying exposure to company logos as letterheads or advertisements and exposure to Thai music or the Persian language Farsi through job contacts or carpooling (see Appendix A, Nos. 52–55). A belief in mere exposure is indicated if respondents selected as “liking x more” or “rating it higher” the character who had more exposure to it.

Results

Most respondents appear to believe that liking increases with exposure for some stimuli or under some conditions, but not for others (range = 44%–88% agreement across seven questions, Nos. 52–55). Although most responses for scenarios involving language or music were consistent with a mere exposure effect, questions involving abstract logos did not show a consistent majority.
In one scenario involving a logo, apparent agreement with mere exposure completely disappeared in the less version of the question. Another logo scenario garnered no majority view even in the more version. Estimated consensus was high (median = 80% for each of three questions), and within-subject consistency was also fairly high (67% consistently answering with mere exposure, $n = 43, p < .00001$, Nos. 52–54). Although some respondents may have held a generalized concept of mere exposure, because of the lack of generalization to abstract logos we tentatively conclude that a majority did not. We speculate, but have not tested, that respondents' beliefs may have involved inferences about learning, particularly for stimuli others are generally known to like (Schindler, Holbrook, & Greenleaf, 1989).

**COGNITIVE DISSONANCE**

The theory of cognitive dissonance (Festinger, 1957) holds that inconsistency among cognitive elements (knowledge about one's world and self) creates a drive-like state of dissonance that people are motivated to reduce. To accomplish this reduction, cognitive elements are modified to become more internally consistent. For instance, because of the inconsistency between stating something to be true and yet believing it to be false, telling a lie will arouse dissonance in a person. To reduce this dissonance, the person may come to believe that the statement is not so false after all.

**Scenarios**

The content of our scenarios was influenced by dissonance experiments involving fasting (Brehm, 1969), eating fried grasshoppers (Zimbardo, Weisenberg, Firestone, & Levy, 1969), and writing essays favoring a position counter to one's own (Linder, Cooper, & Jones, 1967). Our scenarios were structured to involve a freely chosen behavior producing a foreseeably aversive consequence (see Cooper & Fazio, 1984).

The standard paradigm used to demonstrate dissonance-reduction effects involves the manipulation of justification (Eagly & Himmelfarb, 1978). We made this the central feature of our survey items by varying either pay or course grades (see Appendix A, Nos. 56–58). A belief in cognitive dissonance is indicated if respondents selected the character not receiving pay or a grade as the one exhibiting greater attitude change or more liking.

**Results**

Agreement among respondents on the cognitive dissonance questions was closer to the guessing level of 50% than for any other set of questions (range = 39%–67%; see Appendix B, Nos. 56–58). Only one question garnered a
significant level of agreement, and the less version of the same question showed no agreement (see Appendix B, No. 56). Did our respondents simply lack conviction about the correct response for these questions and resort to guessing, or were there two subpopulations with opposing convictions? If individuals were simply guessing, then one would not expect to find them giving consistent responses across questions. The consistency measure did not suggest a widely held belief in cognitive dissonance. Although more respondents answered consistently across questions than expected by chance (28% answered consistently with cognitive dissonance, \( n = 43 \), across three questions, \( p < .01 \)), only roughly 15% of our sample subscribed to the concept of cognitive dissonance (28% less the 12.5% expected by chance). The median estimated consensus on these questions was lower than for most other questions (for the majority view: 50%–70%, 20 < \( n < 24 \)), also suggesting guessing, and there was not much difference between the estimated consensus of those respondents taking the majority position and those taking the minority position.

In summary, our data do not support the assertion that respondents believed in cognitive dissonance phenomena. There was little agreement among respondents either favoring or contradicting dissonance theory, and respondents did not expect there to be much consensus on these items.

GENERAL DISCUSSION

In our study of intuitive hedonics we find that, of the topics investigated, classical conditioning and Weber's law are the most intuitively apparent to nonpsychologists. Cognitive dissonance, on the other hand, is apparently not part of our respondents' intuitive understanding. Although there is some confusion over the boundary conditions, belief in adaptation also appears to be quite general. Adaptation may often be expected in situations for which it does not occur. Overapplication of adaptation principles is consistent with Simonson's (1990) finding that subjects choose more variety for the future than they will actually want if allowed to choose at the time of consumption. Perhaps there would be much greater local resistance to the building of public highways if people had a better understanding of the limits of adaptation to highway noise. By contrast, perhaps more consumers would be willing and able to reform their diets if they believed, as Beauchamp et al. (1983) found, that they would soon like a healthier diet as much as they now like their current one. Finally, without further research, we cannot draw firm conclusions regarding intuitive beliefs about opponent processes and mere exposure. Although recognition of an opponent process tied to adaptation does not seem to exist as a generalized concept, our respondents did expect effects consistent with rebound for some events. Do consumers recognize some specific secondary processes such as aftereffects of exercise, or were our respondents applying
another principle of which we were unaware? Would consumers be more likely to seek experiences like sky diving or cold showers if they were more aware of the aftereffects? Similarly, respondents did not show a generalized belief that increased liking results from repeated exposure, but did predict increased liking from repeated exposure to language or music. How consumers do predict the effects of exposure remains an open issue.

Although our focus was on consumers’ intuitions, the present research has implications for the analysis of consumers’ overt behavior. Lakoff (1987) made the point that metaphors used in talking about emotions can influence how those emotions are experienced and acted on. We believe, likewise, that consumer’s attitudes and beliefs about taste formation and change are likely to affect their choices (and perhaps how they experience the outcome of those choices). Consider the example, introduced at the outset of the present article, involving the decision between a 10-day and 14-day vacation. We now know that adaptation is generally (perhaps too generally) expected by respondents. Therefore, we can predict that, other things being equal, consumers will choose to pay relatively little for the incremental 4 days of vacation. Moreover, we can speculate that adaptation-based arguments in favor of buying the 10-day rather than the 14-day vacation will ring true to the consumer and so be comparatively successful in influencing choice.

There are also normative implications for consumer choice. Accurate knowledge about one’s consuming organ (Schelling, 1984) seems crucial in any reasoned process of consumption. Particularly when a product or service is consumed over time or purchased at one time and consumed at another, insight into the situational and experiential factors that will affect hedonic value is essential if the consumer is to choose appropriately. That consumers are privy to some influences on hedonic value, but oblivious to or wrong about others, means that they may make choices they later regret, or that at least fall short of maximizing pleasure and minimizing pain. For example, a consumer may anticipate that the hedonic value of a recreation vehicle should increase as positive experiences are associated with it over time and yet fail to recognize that the postchoice hedonic value of a full-price model relative to a discounted one should benefit from dissonance reduction processes.

Much about the impact of intuitive hedonics on marketing remains to be studied. Future research might explore whether people find the use of some hedonic influences more legitimate or valid than others. For example, because consumers recognize the hedonic impact of Weber’s law, will they view marketers as manipulative for framing an absolute price increase in a big-ticket item as a small proportional change, or will they view such framing as appropriate, perhaps even helpful? Might widespread belief in classical conditioning make this advertising ploy too obvious and widespread ignorance of cognitive dissonance allow marketers to use it with impunity? In general, the degree to which consumers view marketers as adversaries will partly depend on whether
specific hedonic influence techniques are recognized (Campbell, 1994; Friestad & Wright, 1994). It may be that some intuitions about hedonic response are learned, and it would be interesting to know whether school or life is the better teacher. Student respondents may know more than the average consumer about the theories we tested because of some exposure to those concepts at college, or they may know less than the average consumer because of their relatively young age.4

The studies reported here represent an initial probe of intuitive hedonics. As previously discussed, such research can shed light on consumers' choices and other actions, and it thereby adds to the large existing literature that seeks to enhance our understanding of the behaviors involved in consumption. Its more novel contribution, however, is to enhance our understanding of the consumer's understanding of the consumption process. We expect that this approach will become less novel as the field moves toward more balance between studies of overt behavior and studies of subjective experience.

ACKNOWLEDGMENTS

We gratefully acknowledge comments and suggestions from Daniel Kahneman, Craig McKenzie, Eric Johnson, Dipankar Chakravarti, and the journal reviewers.

REFERENCES


4We administered a small subset of the questions reported in conjunction with another questionnaire at a Behavioral Decision Theory conference. This group was both more educated and older than the student sample, being composed primarily of professors with a professional interest in decision making. Educational background varied widely, from cognitive psychology to accounting and nursing. Surprisingly the professionals' responses were qualitatively similar to the students' in all areas covered on their questionnaire with the exception that the professionals did expect liking to increase with mere exposure to a logo.


Accepted by Eric Johnson.

**APPENDIX A**

Each scenario was followed by a line asking respondents to circle the alternative D or J, getting better or getting worse, and so forth. Surveys 6 and 7 were administered in two versions, varying only in the wording of the final question on each scenario. Alternate wordings are given in parentheses.

**Classical Conditioning**

1. D dislikes his job. Management plays the company jingle every Monday morning as the workers arrive. J goes to a school football game almost every weekend where he hears the school song. As it happens, the school song and the company jingle have the same tune. D and J both are in a pizza parlor where the very same tune is playing on the stereo system. Who is enjoying the tune more (less)?

2. D and J both work for the same company, and both of them dislike their jobs. D's plant plays the company jingle every morning as the
workers arrive. J's plant plays the company jingle every evening as the workers leave. At a company softball game, the company jingle is played. Who enjoys the jingle more at the game?

3. J and D were each set up with a blind date last Saturday. The new dates each brought flowers. When J's last boyfriend brought flowers it was always when he had done something bad. D's last boyfriend never brought flowers. Who was more (less) pleased with the flowers on Saturday?

4. J and D are at an art show which includes an original Van Gogh painting. J and D are both familiar with this painting. J's dentist has a print of this very painting hanging in the waiting room. D sometimes goes to an ice cream parlor with a print of the same painting. Who takes more (less) pleasure in the painting at the exhibit?

5. D and J have each just won $100 in a lottery. D earns $20,000/yr. J earns $40,000/yr. Who is more (less) pleased by the news?

6. D and J have the same income and similar cars. Both cars were just in the shop to be repaired. D was expecting a repair cost of $100, but the mechanic has just called to say that the cost will be $120. J was expecting a repair cost of $1,000, but the mechanic has just called to say that the cost will be $1,020. Who is more (less) upset about the extra charge?

7. D and J have each just purchased chocolate bars from their local supermarkets which have lately been having a sales promotion drive on chocolate bars. D purchased three chocolate bars, which entitled her to one free chocolate bar at her supermarket. J purchased one chocolate bar, which entitled her to one free chocolate bar at her supermarket. Who is happier (less happy) with the free chocolate bar?

8. D and J each have a $5 coupon from a local store. D purchased a $20 calculator for $15. J purchased a $100 calculator for $95. Who is happier (less happy) with the $5 saving?

9. Today D and J each bought several items including a calculator. Each of them spent a total of $120. D spent $15 on a calculator—and has just seen the same model of calculator on offer in a different store for $5 less. J spent $100 on a calculator—and has just seen the same model of calculator on offer in a different store for $5 less. Who is more (less) unhappy at paying $5 unnecessarily?

10. Today D and J each went shopping. D spent $100 on a jacket and $15 on a calculator. Later in the day he found the same model of calculator on offer in a different store for $5 less. J spent $15 on a jacket and $100 on a calculator—and has just seen the same model of calculator on
offer in a different store for $5 less. Who is more (less) unhappy at paying $5 unnecessarily?

11. This year, D and J each have an after-tax income of $27,600. D's income is paid in 12 monthly installments of $2,300. J's income is paid in 12 monthly installments of $2,100, plus two bonus payments of $1200, one in June and one in December. Who is more satisfied with their payment plan?

Opponent Process: Adaptation

12. Imagine that you have been parachute jumping regularly for a few months. Is your fear before and during the jump getting bigger or smaller with each jump?

13. D and J both worked out on a rowing machine early this morning. D has been exercising on the rowing machine regularly for several years. J only recently began exercising. Who finds rowing more (less) unpleasant?

14. Imagine that you have been taking saunas regularly for a few months. Is your discomfort from the heat getting more or getting less?

15. D and J each had a cold shower this morning. J regularly takes cold showers because a dermatologist told her it was good for her pores. D has only recently heard about this theory and decided to give it a try. This morning was the second time D had a cold shower. Who finds the cold water more (less) unpleasant?

16. D and J are inner-city teenagers. J has been taking a lot of crack (cocaine) lately, as he did last night. Last night was the second time D had ever taken crack. Whose drug high was more (less) intense?

17. J and D are both electricians. They sometimes get shocks while they work. J has been doing this work for many years. D has only just recently started working as an apprentice. Who finds the shocks more (less) painful?

Opponent Process: Rebound

18. J and D are both electricians. They sometimes get shocks while they work. J has been doing this work for many years. D has only just recently started working as an apprentice. They each received a shock early this morning. Who is in a better (worse) mood late in the morning?

The wording is a bit awkward in some of the opponent process questions, but we felt that “getting bigger” conveyed the meaning of progression across experiences, whereas “increasing” was more likely to be interpreted as regarding the time period immediately preceding a particular jump.
19. D and J both worked out on a rowing machine early this morning. D has been exercising on the rowing machine regularly for several years. J has just begun exercising recently. Who is in a better (worse) mood late in the morning?

20. D and J are inner-city teenagers. J has been taking a lot of crack (cocaine) lately, as he did last night. Last night was the second time D had ever taken crack. Who is in a better (worse) mood this morning?

21. D and J each had a cold shower this morning. J regularly takes cold showers because a dermatologist told her it was good for her pores. D has only recently heard about this theory and decided to give it a try. This morning D had a cold shower for the second time. Who is in a better (worse) mood after showering this morning?

22. Imagine that you have been taking saunas regularly for a few months. Is your feeling of well-being after the sauna increasing or decreasing?

23. Imagine that you have been parachute jumping regularly for a few months. Is your sensation of well-being after the jump increasing or decreasing with each jump?

24. D and J both made a parachute jump early this morning. D is an experienced jumper and felt little fear before and during the jump. J is a novice jumper and felt terror before and during the jump. It is now afternoon. Who feels more elated in the afternoon?

Adaptation: Noise

25. D and J live equally close to a major highway. In fact the bedrooms overlook the freeway only 30 feet away. The section passing D's house was opened a year ago. The section passing J's house was opened last week. D and J are now each dining at home. Who is more (less) annoyed by the noise?

26. D and J live equally close to a major highway. Noise from the highway is sufficient to be annoying to a weekend visitor. The section passing D’s house was opened a year ago. The section passing J’s house was opened last week. D and J are now each dining at home. Who is more (less) annoyed by the noise?

27. Imagine that you moved recently to an apartment near a noisy highway. Is your irritation at the noise increasing or decreasing?

28. Imagine that you heard a tune for the first time a couple of weeks ago and you didn’t like it. Since then you have heard it several more times. Is your dislike of the tune increasing or decreasing?

29. Imagine that workers have been using a noisy pneumatic drill outside your home every day this week, and you have been at home each day. Is your overall subjective experience of hearing the drilling getting better or getting worse?
30. When D and J left their work last night the air-conditioning was emitting a noisy high-pitched whine. D was told that the repair person would arrive at 10:00 A.M. today. J was told that the repair person would arrive at 3:00 P.M. today. D and J have just arrived at work at 9:00 A.M. and have discovered that the repair person will arrive an hour later than they had expected, so they will have to suffer the whine for an extra hour. Who finds the extra time listening to the noise more upsetting?

31. Imagine you are sitting in an office and for the last few minutes you have heard a loud high-pitched tone coming from a room nearby. The tone is still continuing. Is the overall subjective experience of listening to the tone getting better or getting worse?

32. Imagine that a couple recently moved to the apartment next to yours and they have the habit of playing their stereo quite loud for an hour or two every evening. Is your irritation from the noise increasing or decreasing?

Adaptation: Taste and Smell

33. Imagine that you are taking an unpleasant-tasting medicine as part of a medical treatment. Is your overall subjective experience of the taste getting better or getting worse?

34. Imagine that for the last few months you have been living close to a factory which emits non-toxic but unpleasant-smelling fumes. Is your overall subjective experience of the smell getting better or getting worse?

35. D and J are both on low salt diets. They have decided to make an exception and have a ham sandwich at a work lunch. D has been on the diet for one month; J has been on the diet for four months. Who enjoys the sandwich more (less)?

36. D and J are both on low sugar diets. Each has decided to make an exception and have a piece of cake after dinner tonight. D has been on the diet for one month; J has been on the diet for four months. Who enjoys the cake more?

37. D and J are both on low sugar diets. Today is a special day so they have decided to make an exception and have a piece of chocolate cake. D has been on the diet for one month; J has been on the diet for four months. Who enjoys the cake more (less)?

Adaptation: Pain

38 (39/40). Imagine that as part of a medical treatment you have been having injections weekly (daily/hourly) for the last 10 weeks. Is the overall subjective experience of having an injection getting better or getting worse?
41. Imagine that you have had your hand in a bucket of iced water for the last few minutes. Is the pain in your hand increasing or decreasing?

42. Imagine you have a severe headache which has lasted for a few days. Is the overall subjective experience of having a headache getting better or getting worse?

Adaptation: Life

43. D and J have each been driving home from work along their usual traffic route, and are caught in a traffic jam. D hardly ever has this happen to her. J has this happen to her almost every day. Who is more (less) irritated by the traffic jam today?

44. Imagine that you have been in jail for some years. Is the overall subjective experience of being in jail getting better or getting worse?

45. D and J each have cars which have had one tire slashed recently by vandals, while it was parked in a local street. D has had this happen several times in the past. J has had this happen only once before. Who is more (less) upset by the tire-slashing?

46. D and J each have cars which have had one tire slashed recently by vandals, while it was parked in a local street. D has had this happen once before. J has never had this happen before. Who is more (less) upset by the tire-slashing?

47. D and J are spending a quiet Sunday at home. D and J are both single adults. D has an income of $60,000 a year; J has an income of $30,000 a year. Who is enjoying the day more?

48. One year ago D won $1,000,000 in the lottery. J has not won any major prizes. At the moment D and J are each watching a film on television. Who is happier watching the film?

49. One year ago, D suffered an accident and is no longer able to walk. J has not suffered any major accidents. At the moment D and J are each watching a film on television. Who is happier watching the film?

50. One year ago D won $1,000,000 in the lottery. J has not won any major prizes. At the moment D and J are being interviewed about life satisfaction. Who expresses greater satisfaction with their life now?

51. One year ago, D suffered an accident and is no longer able to walk. J has not suffered any major accidents. At the moment D and J are being interviewed about life satisfaction. Who expresses greater satisfaction with their life now?
Mere Exposure

52. D hears Thai music every Friday because she commutes in a car pool and the Friday driver is Thai. J has never heard Thai music before today. J and D are now at an ethnic music festival where some Thai music is being played. Who enjoys the Thai music more (less) today at the ethnic festival?

53. J is a social worker. One of the families that J works with is Persian and every week when J comes to visit they are listening to a news broadcast in Farsi (the Persian language). D has never heard Farsi before but is accompanying J on her rounds today and hears it for the first time. Who finds the sound of the language more (less) pleasant?

54. Every Sunday for several months a company has run an experimental advertisement in the local newspaper that shows ONLY the company logo. There are no words, pictures, or other graphics in the ad. J lives in the test market area and reads the Sunday newspaper. Thus J has seen the original logo once each week during the ad campaign. D does not live in the test market area and has never seen the logo before. The company is also conducting a survey of attitudes toward the company logo. D and J are both respondents in the survey and neither is familiar with this company's products. Who rates the company logo higher (lower)?

55. D and J both work for a company which is introducing a new abstract logo for its letterhead. D is just back from vacation and is seeing the logo for the first time; J has been using the logo letterhead for two weeks. Who likes the logo more today?

Cognitive dissonance

56. As students in separate literature courses on propaganda, D and J are both asked to write an optional five-page essay justifying terrorism. The assignment in D's class is worth bonus points equivalent to 15% of the course grade. The assignment in J's class is not worth any bonus points. As it turns out, D and J, who are both strongly opposed to terrorism, exert about the same amount of effort and end up with similar essays supporting terrorism. The next day they hear a news report about a terrorist strike. Who is more (less) inclined to explain the terrorists' point of view in a conversation with friends?

57. D and J are both fasting in a charity “fast-a-thon” as substitutes for friends who could not honor their commitments to participate. The first day of fasting is so successful that the charity would like the fast to
continue for a second day. D’s friend asks D to continue with the second day of fasting, and D complies. J’s friend offers to pay J $50 to continue with the second day of fasting, and J accepts though he would have complied even without being paid. Who feels more (less) hungry at the beginning of the second day?

58. J and D are visiting a foreign country where grasshoppers are considered a delicacy. They are at a dinner where they know grasshoppers will be served. Before the dinner D’s friend bet him $3 that D wouldn’t eat a grasshopper. J’s friend bet him $20 that J wouldn’t eat a grasshopper. Both D and J do eat a grasshopper. Who dislikes the taste of the grasshopper more (less)?
## APPENDIX B
Percent Answering in Agreement With the Psychological Concept

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</tr>
<tr>
<td>48. Lottery, watching TV</td>
<td>74</td>
<td>39&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>49. Paraplegic, watching TV</td>
<td>74</td>
<td>34&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>50. Lottery, life satisfaction</td>
<td>74</td>
<td>25&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>51. Paraplegic, life satisfaction</td>
<td>74</td>
<td>22&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>Mere Exposure</strong></td>
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<tr>
<td>52. Thai music</td>
<td>43</td>
<td>88</td>
</tr>
<tr>
<td>53. Farsi</td>
<td>43</td>
<td>84</td>
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<tr>
<td>54. Logo advert</td>
<td>42</td>
<td>84</td>
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<tr>
<td>55. Logo letterhead</td>
<td>77</td>
<td>44&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>Cognitive Dissonance</strong></td>
<td></td>
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<tr>
<td>56. Terrorist</td>
<td>41</td>
<td>67</td>
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<tr>
<td>57. Fast-a-thon</td>
<td>118</td>
<td>48</td>
</tr>
<tr>
<td>58. Grasshopper</td>
<td>42</td>
<td>47</td>
</tr>
</tbody>
</table>

<sup>a</sup>Probabilities between .05 and .10 are reported as approaching, because, though the null hypothesis cannot be safely rejected, neither can it firmly be accepted. <sup>b</sup>Levels less than 50% indicate disagreement with the theory, for example, most respondents think the novice parachutist will be more elated in the afternoon.