

- with increases in brain dopamine and occupancy of D-2 receptors. *Journal of Pharmacology and Experimental Therapeutics*, 291(1), 409–15.
- Wilson, C., Nomikos, G.G., Collu, M., and Fibiger, H.C. (1995). Dopaminergic correlates of motivated behavior: importance of drive. *Journal of Neuroscience*, 15(7), 5169–78.
- Wilson, T.D. and Schooler, J.W. (1991). Thinking too much: introspection can reduce the quality of preferences and decisions. *Journal of Personality and Social Psychology*, 60(2), 181–92.
- Wheatley, T., Meyers, J.M., Gilbert, D.T., and Axson, D. (2000). Focalism: A source of durability bias in affective forecasting. *Journal of Personality and Social Psychology*, 78(5), 821–36.
- Winkielman, P., Berridge, K.C., and Wilbarger, J. (2000). Subliminal affective priming of hedonic value: Unconscious reactions to masked happy versus angry faces influence consumption behavior and drink evaluation. *Unpublished manuscript*.
- Zajonc, R.B., and Schwarz, N. (1997). Subliminal affective priming resists attributional interventions. *Cognition and Emotion*, 11, 433–65.
- Wise, R.A. (1982). Neuroleptics and operant behavior: the anhedonia hypothesis. *Behavioral and Brain Sciences*, 5, 39–87.
- (1998). Drug-activation of brain reward pathways. *Drug & Alcohol Dependence*, 51(1–2), 13–22.
- and Bozarth, M.A. (1985). Brain mechanisms of drug reward and euphoria. *Psychiatric Medicine*, 3(4), 445–60.
- Wyvell, C.L. and Berridge, K.C. (2000). Intra-accumbens amphetamine increases the pure incentive salience of sucrose reward: Enhancement of reward 'wanting' without 'liking' or response reinforcement. *Journal of Neuroscience*, 20(20), 8122–30.
- Yeomans, J.S. (1989). Two substrates for medial forebrain bundle self-stimulation: myelinated axons and dopamine axons. *Neuroscience and Biobehavioral Review*, 13(2–3), 91–8.
- Zajonc, R.B. (1980). Feeling and thinking: preferences need no inferences. *American Psychologist*, 35, 151–75.
- (1998). Emotions. In D.T. Gilbert, S.T. Fiske, and G. Lindzey (Eds.), *The handbook of social psychology* (4th ed., Vol. 2, pp. 591–632). Boston: McGraw-Hill.

## 3

## The Pursuit and Assessment of Happiness can be Self-Defeating

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The only way to avoid being miserable is not to have enough leisure to wonder whether you're happy or not. (George Bernard Shaw)

Happiness is as a butterfly, which, when pursued, is always beyond our grasp, but which, if you will sit down quietly, may alight upon you. (Nathaniel Hawthorne)

All sentient creatures presumably favor pleasure over pain. However, only humans, with their unique capacity for planning and self-reflection, have the capacity to deliberately attempt to conduct their lives so as to maximize their hedonic experience. The fact that we are able to consider the potential short- and long-term hedonic benefits of our actions, does not mean of course that it is necessarily advisable to attempt to deliberately maximize happiness. Nevertheless, a cornerstone of western thought is the assumption that the explicit pursuit of happiness is and should be a primary source of human motivation. The pre-eminence of this goal is exemplified in the US Declaration of Independence, which characterizes the pursuit of happiness as a 'self-evident' and 'inalienable right.' Consistent with this tradition, psychologists have observed that the explicit goal of maximizing happiness is a core motivation of many individuals, particularly those in western cultures (for reviews, see Kityama and Markus, 2000; Myers, 1992, 2000). For economists, the notion that individuals maximize utilities has long been considered a cornerstone of economic theory. However, conceptualizations of the relationship between maximizing utilities and the explicit pursuit of happiness have varied in response to evolving notions of utility.

Since the ascension of neoclassical economics at the end of the nineteenth century, the concept of utility has played a central role in economics. However, economists' interpretation of the term has evolved, and, because economists believe that people maximize utility, their understanding of human behavior has evolved in parallel. For Bentham, who invented the term, utility was

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commensurate with happiness. Hence, the early neoclassical economists, who adhered to the Benthamite interpretation, viewed behavior as a matter of maximizing happiness. Responding, in part, to the psychology of their time (Lewin, 1996), however, early neoclassical economists became skeptical of whether people were really maximizing, or even attempting to maximize, their own happiness. These doubts, along with the perennial problem that utility cannot be measured in an objective fashion, led to attempts to explain behavior in more psychologically neutral terms. These attempts culminated in the ordinal utility/revealed preference perspective, according to which human behavior is simply a matter of taking actions designed to satisfy one's preferences (see Loewenstein, 1992; Stigler, 1965; for a discussion of these developments).

The ordinal utility revolution did not occur without dissent. I.M.D. Little (1957), for example, in his *Critique of Welfare Economics*, lamented that ordinal utility hobbled economists' ability to draw implications about the welfare effects of economic policies. Amartya Sen (1973) commented on the vacuousness of the revealed preference concept as well as the patent unrealism of the small number of testable predictions that it does make (e.g., stability, consistency, and convexity). Philosophers raised questions about what it means to satisfy one's preferences in a dynamic setting in which preferences and endowments change (Page, 1968). Even John Hicks, a member of the triad credited with the concept of ordinal utility, in his later writings, stated that 'the ordinal utility revolution, in which I played a role, was not nearly so much of an advance as I supposed' (Hicks, 1976).

These problems have led some, including most prominently Daniel Kahneman and his colleagues, to advocate a return to the Benthamite concept of utility (see, e.g., their paper titled *Back to Bentham?* (Kahneman et al., 1997)). As Kahneman points out, many of the most important questions for economics, such as whether people can successfully predict their own future utilities or whether people are successful in maximizing utility, are only meaningful under the older, Benthamite, interpretation of the term (Kahneman and Varey, 1991). It is also worth noting that many economists who publicly embrace ordinal preferences, often refer to utility in ways that betray a lingering hedonic interpretation of the concept.

While agreeing with Kahneman and the other critics of ordinal utility that Benthamite utility offers a richer and more promising foundation on which to build Economics, our goal is to highlight some problems with the Benthamite utility that have not received much attention from economists. We point to three specific problems that interfere with people's ability to optimize their own levels of utility.

First, people may have only a limited explicit access to the utilities that they derive from experiences. As many writers have commented, maximizing utility in the real world involves a hopelessly complex constrained optimization problem. But think of how much more difficult it is to solve such a problem if one lacks access to the criterion variable! Maximizing utility when one cannot assess one's own level of utility is as futile as the task of a firm that tries to maximize its profits without being able to measure them.

Second, when people do attempt to assess their own level of utility, such efforts may adversely affect their well-being—that is, undermine the utility they are attempting to measure. Like the Heisenberg uncertainty principle in physics, which says that one cannot measure the energy of a particle because the act of measurement affects the particle's energy level, introspection about happiness may be impossible because introspecting affects (and potentially undermines) happiness. Moreover, even if there were no measurement interferences, there might be a significant hedonic cost to doing so.

Third, happiness-seeking may be a self-defeating goal. A variety of lines of psychological research suggest that explicit efforts to maximize one's happiness can undermine the ability to achieve happiness. Like many other goals, such as not thinking about a problem (Wenzlaff and Wegner, 2000) or re-experiencing a mood (Wegner, Erber, and Zanakas, 1993) the pursuit of happiness may be self-defeating. Therefore, to the extent that economic agents do attempt to deliberately maximize happiness, they are unlikely to succeed.

We review research pertinent to these three points, then present the results from two studies—one laboratory experiment and one field study—that were designed to examine the impact on happiness of monitoring one's happiness and of trying to be happy. It should be noted at the outset that, while we raise problems with Benthamite utility, these comments should not be construed as a call for the perpetuation of ordinal utility. Ordinal utility suffers from its own set of problems, including several that are analogous to those we discuss here. Perhaps the conclusion that should be drawn is that utility maximization is an imperfect representation of human behavior, regardless of one's definition of utility.

## 1. THE LIMITS OF HEDONIC INTROSPECTION

Most researchers who study happiness or subjective well-being, while recognizing that there is some error in self-report measures, nevertheless take individuals' assessments of their happiness at face value. As Myers, one of the foremost purveyors of this research observes: 'By definition, the final judge of someone's subjective well-being is whomever lives inside that person's skin. "If you feel happy" noted Jonathan Freedman "you are happy—that's all we mean by the term"' (Myers, 2000, p. 57).

There are a number of reasons why many psychological researchers have been inclined to accept individuals' reports of their hedonic states. First, there is a certain definitional self-evidence to our ability to assess the utility that we derive from experiences. What, after all, could it mean for an individual to be happy if they were not aware of it? Second, research exploring individuals' self-reports of global subjective happiness has shown the construct to have relatively stable qualities of validity and reliability. For example, Lyubomirsky and Lepper (1999), in a recent analysis of 14 studies that used a simple four item global happiness scale, found that individuals' self-reports of their overall happiness tended to correlate reasonably well with the assessments made by friends and spouses, with

correlations in the range 0.41–0.66. Test and re-test reliabilities were also reasonably high with a mean correlation of 0.72, and in the range 0.55–0.90.

Although individuals may have some global sense of their overall degree of well-being, there is also considerable evidence that reports of global happiness can be powerfully influenced by the situational context in which individuals are queried. A famous example of the difficulty of judging one's global happiness comes from the research of Strack, Martin, and Stepper (1998), who asked some college students how many times they had gone out on a date in the last month, then how happy they had been overall. Other students were asked the same questions but in the reverse order. For those asked about dates first, the correlation between the two items was 0.66; for those asked about happiness first, the correlation was close to zero. These results suggest that instead of recalling their hedonic state over the last month, the students seemed to be looking for more objective cues about whether their last month had been good or bad and attempted to judge their happiness based on those cues. When the information about dates was activated, it played a more prominent role in these evaluations. Additional studies have demonstrated that individuals' general assessment of their happiness can be similarly biased by a number of other situational factors including, the current weather (Schwarz and Clore, 1983), finding a dime (Schwarz, 1987), and the outcome of soccer games (Schwarz et al., 1987). We next describe a few more specific classes of evidence regarding peoples' difficulties in accessing their own utilities.

### 1.1. Distinguishing between Visceral Experience (Experiential Consciousness) and Reflective Appraisal (Meta-Consciousness)

One recourse to the difficulties associated with making global judgments about happiness and life satisfaction has been to argue that, while individuals may have difficulty summing their experiences over time, they are capable of providing snapshot assessments of their hedonic experience at any given moment (Kahneman, 1999, p. 5). Kahneman distinguishes between 'subjective happiness' measures in which respondents 'state how happy they are' and 'objective happiness' measures that are 'derived from a record of instant utility.' The assumption underlying this view is that individuals maintain a continuous and reportable hedonic experience, but errors occur when individuals attempt to recollect and average valenced moments over time. According to this view, these difficulties can be averted by asking individuals to make spontaneous moment by moment assessments, and the researchers rather than the respondents do the averaging over time. Although we concur with the claim that individuals experience a continuous and potentially measurable hedonic valence, we believe that great caution must be taken in assuming that individuals' moment to moment hedonic assessments reflect their underlying experience.

Our central claim is that an understanding of hedonic utility depends critically on an appreciation of the fundamental distinction between individuals'

continuous hedonic experience and their intermittent reflective appraisal (alternately referred to as 'meta-awareness or meta-consciousness' (Schooler, 2001, 2002)) of that experience. We, like many other researchers, assume that every waking moment entails a *hedonic experience* that is subjectively registered as visceral feelings (Damasio, 1994; Loewenstein, 1996) accompanied by a host of physiological responses including changes in the cardio-vascular flow (Tomaka et al., 1997), eye blink response (Lang, 1995), and brain activation (e.g., Lane et al., 1997). However, we further assume that, although individuals' hedonic experience is continuous, their meta-awareness of this experience is only intermittent. The demands of life are such that it is simply not possible to continually monitor how we are feeling at every moment of the day. As a result one can *feel* happy or sad, without explicitly noticing this at the time. The three of us, and we expect many readers, have had the experience of having our spouse tell us that we were unhappy, which we had not realized until alerted of the undeniable truth. Similarly, research on 'flow states,' which occurs when individuals are deeply absorbed in challenging tasks, suggests that many of life's most positive experiences occur when individuals are not explicitly aware of the pleasure they are feeling at the time. As Csikszentmihalyi (1999, p. 825) puts it:

Strictly speaking, during the experience of [of flow] people are not necessarily happy because they are too involved in the task to have the luxury to reflect on their subjective states.... But afterwards, when the experience is over, people report having been in as positive a state as it is possible to feel.

If we often, if not typically, have hedonic experiences in the absence of meta-awareness of those experiences, then it should not be assumed that our hedonic experience and our explicit appraisals of experience are necessarily identical.

### 1.2. Inferring Hedonic Response on the Basis of One's Own Behavior

If people have difficulties accessing their own utilities, how do we make decisions about pleasure and pain? Our claim here is that because the translation from hedonic experience into an explicit appraisal is very difficult, if not impossible, people often rely on *inferences* to estimate their own utilities. Such inferences can draw on a variety of sources including self-observation, situational context, and our theories about how we think we should be feeling (for similar claims see Schwarz, 1987; Schwarz and Clore, 1983; Schwarz and Strack, 1999). *In short, we suggest that individuals' hedonic experiences are typically represented as visceral non-verbal feeling states. However, when compelled to make hedonic judgments, individuals draw on inferencing processes in order to translate these visceral states into an explicit hedonic appraisal.*<sup>1</sup>

<sup>1</sup> The present account represents somewhat of a compromise between the disparate positions of Zajonc (1984) who argued that preferences need no inferences and Lazarus (1984) who argued that all emotional appraisals are mediated by cognitive considerations. Like Zajonc, we argue that individuals can *experience* preferences without drawing on inferences. However, like Lazarus (1984), we argue that

In the following discussion we briefly review the evidence that individuals can lack meta-awareness of their underlying hedonic experience and therefore must draw on various external sources in order to infer how they must be feeling.

### 1.2.1. *Inferring Attitudes from One's Behavior*

The notion that individuals may lack a direct insight into their affective state, and therefore must infer their state based on a situational context, dates back at least as far as William James (1884), who suggested that individuals infer emotions by observing their actions. Accordingly, rather than running from a bear because one feels fear, James suggested that individuals run from a bear, and in observing this behavior, infer that they must be feeling fear. The view that we are promoting here is analogous to James' theory of emotion with one critical difference. In keeping with the suggestion that individuals maintain continuous hedonic experience, we argue that one does indeed 'feel' fear as soon as one sees the bear. However, one may not explicitly appraise the emotion as such until one reflects on one's behavior. Thus, from our perspective when one sees a bear one immediately *feels* fear, runs, and upon reflecting on the fact that one is running, becomes meta-conscious of the fact that one is experiencing fear.

The claim that individuals infer their responses to stimuli by observing their own behavior has its more recent exemplification in the self-perception theory of Daryl Bem. According to the Self-Perception Theory (Bem, 1967, 1972), individuals infer their own attitudes and preferences in much the same way as they infer those of others. As Bem (1972, p. 2) put it, 'Individuals come to "know" their own attitudes, emotions and other internal states partially by inferring them from observation of their own overt behavior and/or the circumstances in which this behavior occurs.' The self-perception theory was originally articulated as an alternative to the Cognitive Dissonance Theory (Festinger, 1957), which hypothesized that individuals alter their attitudes in order to reduce the unpleasant internal conflict (dissonance) that can arise when attitudes and behavior are discrepant. For example, the notion of cognitive dissonance reduction was used to account for why individuals who agree to participate in an inherently boring task for \$1 report liking it better than those who agree to participate for \$20, (Festinger and Carlsmith, 1959). According to the cognitive dissonance account, individuals who agree to participate for \$1 experience dissonance between the perceived modest compensatory value of a dollar, and the perceived aversiveness of participating in a routine task. They, therefore, alter their appraisal of the task in order to reduce dissonance. Bem, in contrast, argued that individuals do not feel any internal dissonance, but rather, lacking insight into their own hedonic response, infer their attitudes by observing their own behavior. Consistent with this view, Bem demonstrated that many attitude judgments previously ascribed to

individuals' explicit appraisals generally require cognitive inferences. Our claim is that the source of the disagreement in this debate stems from a failure to consider the distinction we draw here between visceral hedonic experience, which does not require inferences, and explicit hedonic appraisals, which typically, if not always, invoke inferencing processes.

dissonance reduction were mirrored by the *inferences* of observers who never actually participated in the experiments, but rather anticipated the attitudes of participants in the studies based on the scenarios alone. For example, when hearing the scenario of an individual volunteering to participate in an experiment for a dollar, the judges assumed that the task was more enjoyable than they did when they learned of participants agreeing to participate for \$20.

Since Bem's original postulation of the self-perception account of cognitive dissonance, there has been some controversy regarding which mechanism, cognitive dissonance or self-perception, best accounts for the extant data. Although some disagreements still exist, most researchers now accept that both processes can come into play depending on the circumstances. When disparities between original attitudes and subsequent behavior are very large, the cognitive dissonance processes in all likelihood come into play; however, when the differences are more modest, self-perception alone may be the primary operator (see Fazio, 1987; for a review). Indeed, the self-perception theory has been used to account for many findings in the psychological literature. For example, the self-perception theory accounts for why individuals' assessment of the intrinsic interest of an activity is reduced when they receive a reward for engaging in it (Lepper et al., 1973). Accordingly, they infer that the receipt of the reward must be the reason they are doing it, and, thus, come to estimate their interest as being less. The self-perception theory can also account for the effects of suppressing facial expressions. For example, Strack et al. (1998) had research participants view cartoons, while holding a pen in the mouth in a manner that either did or did not inhibit the muscles associated with smiling. Participants found the cartoons significantly less amusing when they held the pen in a manner that inhibited smiling. These and similar findings (e.g., Olson, 1990) illustrate how individuals' preferences can be based, at least in part, on inferences drawn from observing their own behavior. Critical to the self-perception approach is the underlying premise that *individuals can and often do lack meta-awareness of their own internal states*, and thus must infer it in much the same way as others. As Bem put it: 'To the extent that internal cues are weak, ambiguous, or uninterpretable, the individual is functionally in the same position as an outside observer' (Bem, 1972, p. 2).

### 1.2.2. *Misattribution Theory*

Although observation of one's own behavior is an important source of inference regarding the state of one's hedonic response to an experience, it is not the only source. Research on misattribution suggests that individuals also infer their affective/hedonic responses on the basis of the situational context in which they find themselves. For example, in a classic study by Schachter and Singer (1962), participants were given either a norepinephrine or a placebo pill and then were exposed to a confederate who behaved either pleasantly or unpleasantly. The context of the confederate powerfully influenced the manner in which they evaluated the arousal resulting from the norepinephrine, such that relative to the placebo they reported feeling more elated when exposed to the pleasant

confederate and more annoyed when exposed to the unpleasant one. Since this original study, a number of limitations to its scope and interpretation have arisen (e.g., Reisenzein, 1983). Nevertheless, the basic claim that individuals can misattribute the source of arousal and thereby alter their hedonic assessment, has remained intact. For example, arousal induced by exercise can be misattributed to anger (Zillman, 1978) and arousal induced by fear can be misattributed to sexual attraction (Dutton and Aaron, 1974).

A key assumption of the misattribution theory is that individuals do have an underlying subjective experience; however, this hedonic experience is ambiguous and therefore open to interpretation based on the context of the situation. This fact is important because it supports our basic contention that explicit hedonic appraisals represent the evaluation of a difficult-to-discern hedonic feeling that is interpreted in the light of inferences.

### 1.2.3. *Infering Value from Behavior (Anchoring Effects)*

The under-specificity of hedonic experience not only plays a role in self-reported hedonic evaluations, it can also affect economic decisions based on hedonic appraisals, including the price that individuals are willing to pay for an experience. This phenomenon is illustrated in a series of studies conducted by Ariely et al. (2000) that examine the anchoring effects in the valuation of hedonic experiences. In a typical experiment, subjects first experience an aversive tone over headphones. Next, they are asked whether, *hypothetically*, they would be willing to listen to the tone again for 30 s for either a small payment (10 cents) or a larger payment (90 cents). After answering the hypothetical question, respondents enter a real market in which they indicate the prices for which they are willing to listen to the tone, and if their prices are accepted by the market mechanism, they get the tone for the specified duration and the amount of money that is the outcome of the market mechanism. (The mechanisms used were all methods, such as the Becker-DeGroot-Marschak procedure (1963), designed to give subjects an incentive to reveal their true value for an object.) The results revealed that subjects' valuations are powerfully affected by the initial response to the hypothetical question (the anchor) they are exposed to.

In an even more dramatic, albeit somewhat less tightly controlled study, the researchers asked one set of students if they would be willing to listen to their professor (Ariely) read 10 min of *Leaves of Grass* to them if they were paid \$10. Others were asked if they would pay \$10 for the same experience. The researchers then elicited prices (which could be positive or negative) from students for listening to *Leaves of Grass* for 1, 3, or 10 min. Again, students' values were powerfully influenced by the initial question. Those asked if they would pay were willing to pay to listen to the poetry, and those asked if they would listen if they were paid, needed to be paid to do it. But, whether they valued the experience positively or negatively, they named higher amounts of money for longer durations of poetry. Participants had no idea whether this was a positive or negative experience, but they knew that it was more positive or negative if it

was longer. Whether they have sampled it (as in the case of the tone) or not, individuals seem to be limited in their ability to assess hedonic experiences—even in some cases whether the experience is positive or negative. They draw on any available cues, including the arbitrary anchor values, to resolve the ambiguity.

## 2. THE EFFECTS OF HEDONIC INTROSPECTION

The evidence we have reviewed so far suggests that when people attempt to assess their own hedonic state they not only access internal visceral feelings, but also use any available cues to help them infer their own likely feelings. In Section 2, however, the relative importance of these two inputs—internal feelings and inferences—seems to depend on the nature of the introspective process.

### 2.1. The Effects of Introspection on Hedonic Appraisals

Given the sizable body of research that relies on the hedonic appraisal of experience as a primary measure, surprisingly little research has examined the impact *per se* of monitoring hedonic experiences on the appraisal of such experiences. Ariely (1998) reports one of the very few studies that specifically examined the impact of on-line hedonic appraisals. Participants were presented with a series of painful stimuli of varying intensities, profiles (intensity changes over time), and durations. At the end of each painful experience, the participants provided overall retrospective appraisals of the amount of pain that they experienced during the trial. Half of the participants evaluated the experience only in retrospect (after it ended), while the other half were also asked to provide continuous evaluations of the intensity of the experience as it unfolded (also known as moment by moment or on-line evaluations). The comparison of these two groups (see also Ariely and Zauberman, 2000) showed that once respondents 'created' the moment by moment evaluations, their overall evaluation of the experience as a whole was influenced by the momentary responses they produced. Moreover, the results showed that the respondents were less influenced by the way the experience unfolded over time (e.g., they were less sensitive to the changes in intensity over time), suggesting that their hedonic experience was muffled. Ariely's findings are consistent with the general claim that introspection can produce inferences that can reduce individuals' sensitivity to their own hedonic experience. Accordingly, participants in the no on-line evaluation condition, may have been able to access subtle differences in their affective state that followed being subjected to sequences of painful experiences. In contrast, participants in the on-line condition, by simply relying on their mean reported response, may have lost access to their actual hedonic experience.

In addition to Ariely's demonstration that on-line hedonic introspection can reduce hedonic differences associated with the duration of aversive stimuli, other studies have provided evidence that introspective techniques that specifically

encourage reflective inferencing can overshadow individuals' sensitivity to their underlying hedonic response.

### 2.1.1. *Introspective Techniques that Minimize Sensitivity to Underlying Hedonic Experience*

A number of studies suggest that, inducing decision-makers to verbally reflect upon their decision processes can increase their weighting of considerations that can be verbalized, and decrease their access to gut-level feelings. In a study by Wilson and Schooler (1991), participants sampled five different strawberry jams. In the reflection condition, participants were then asked to reflect on their evaluation, listing the reasons why they felt the way they did about each jam. All the participants were then asked to rate the five jams. The correlations between the participants' jam ratings and those of the experts (provided by *Consumer Reports*) were then assessed. Wilson and Schooler found that whereas control subjects provided ratings that were closely aligned with that of the experts ( $r = 0.56$ ), the judgments of the participants who analyzed their reasons were completely unrelated ( $r = 0.16$ ) to that of the experts. Within the current context, the findings of Wilson and Schooler can be interpreted as suggesting that reflection caused the participants to emphasize the inferences that they made about their experience and 'lose touch' with their actual hedonic feelings.

One possible concern with Wilson and Schooler's study is that it used the experts' opinions as the normative basis for assessing the quality of participants' hedonic judgments. Failing to agree with an expert does not necessarily mean that one's opinions are unreflective of the utility that one derives from an experience. The participants in the self-reflection condition might simply have had different hedonic experiences, which were well captured by their self-reports. A follow up study by Wilson et al. (1993), however, counters this interpretation. The participants examined various art posters. In the reflection condition, they analyzed why they felt the way they did about the posters and then rated them. In the control condition they simply rated the posters without reflection. Participants were then given the opportunity to select a poster and take it home. When Wilson et al. contacted the participants two weeks later, they found that those in the reflection condition were less satisfied with their choices (and less likely to have hung them up) than those in the control condition. The fact that participants who engaged in reflection were ultimately less satisfied with their selections, suggests that reflection did not simply change their perceived utilities. Rather, these findings suggest that reflection actually undermined people's ability to decipher the utilities that they had actually experienced, and which they re-experienced after the impact of self-reflection had worn off.

The above findings provide just a sampling of studies that indicate that self-reflection may impair people's ability to decipher the hedonic value of experience. Other studies have found similar effects of self-reflection on people's ability to judge the utility of courses (Wilson and Schooler, 1991), peanut butter (Schooler and Wilson, 1991), puzzles (Wilson et al., 1984), pens (Wilson, 1990), and even relationships (Wilson et al., 1984).

### 2.1.2. *Introspective Techniques that Maximize the Sensitivity to Hedonic Experience*

If encouraging verbal reflection diminishes individuals' access to their own visceral reactions, then one should expect that introspective techniques that decrease verbal reflection would lead to appraisals that are more in line with individuals' actual underlying visceral experience. Indeed, several studies have found that when self-reflection is minimized by forcing individuals to make very quick hedonic judgments, the hedonic assessments become realigned with the actual experience. For example, Wilson and Lindsey (as reported in Wilson et al., 2000) had participants evaluate the quality of their relationship with a significant other. Some participants engaged in self-reflection, analyzing the reasons for their evaluations. Others simply gave an overall rating. As in prior studies, they found that self-reflection reduced people's ability to adequately gauge the quality of their relationship, as revealed by the fact that those who analyzed their reasons were less able to predict the quality of their relationship at a later date relative to the control subjects who did not engage in self-reflection. However, Wilson and Lindsey included an additional condition in which, following self-reflection, participants made very quick (3 s) evaluations. In this condition, the correlations between participants' ratings of their relationship and their later reported ratings was as high as it was for participants who did not engage in self-reflection at all. Apparently, discouraging self-reflection by having people make rapid judgments restores their ability to access their own 'gut' level reactions.

In addition to quick judgments, other techniques may also encourage individuals to draw more on their hedonic experience by enabling them to be more keen observers of their own visceral responses. For example, a number of studies have found that when individuals engage in tasks with a mirror present, their hedonic appraisals tend to more closely correspond to their subsequent behaviors (e.g., Scheier and Carver, 1977). One possible interpretation of such findings is that the mirror gives the individuals a greater opportunity to observe and/or experience their own visceral hedonic response, and thus enables them to draw more accurately on this source of information.

In sum, it seems that hedonic appraisal may access internal visceral states depending on the manner in which individuals introspect. When individuals are encouraged to explicitly reflect on the basis for their attitudes and preferences, their hedonic appraisals rely more heavily on inferences. In contrast, when they are forced to make quick gut judgments (or have a mirror present), their hedonic appraisals seem to reflect better their actual hedonic experience.

## 2.2. *The Impact of Introspection on Hedonic Experience*

There are a number of reasons to think that engaging in hedonic appraisal might, in addition to altering how individuals appraise the situation, affect the hedonic experience itself. First, if, as seems likely, hedonic introspection increases the focus on the self, then such a reflection may detract from the amount of attention that is devoted to the activity itself, which may in turn detract from the

experience. In addition, if, as we have suggested, individuals have difficulty explicitly deciphering the degree of enjoyment that they are deriving from an experience, then extensive self-reflection might cause the individuals to overlook subtle features of the experience, thereby missing out on the hedonic utility that they might have otherwise enjoyed. Finally, it is possible that engaging in hedonic appraisal might cause individuals to attend to elements of the experience that might have, could have, or should have been, and such comparisons may lead to disappointment and regret.

Although little research has specifically looked at the effects of experimentally manipulating the monitoring of hedonic experiences on the attainment of happiness, a variety of studies have reported correlational evidence that is consistent with the proposition that monitoring happiness undermines happiness. For example, numerous studies have examined the relationship between individuals' tendency to introspect and their overall reported happiness. The consistent finding in this research is that chronically happy people are less introspective (Lyubomirsky and Lepper, 1999; Veenhoven, 1988). Moreover, chronically unhappy people tend to show relatively high levels of self-consciousness, self-focused attention, and ruminative thinking (Ingram, 1990; Musson and Alloy, 1988). One potential interpretation of such findings is that, introspective individuals may be particularly apt to reflect on their reactions to experiences that may decrease their enjoyment (or exacerbate their displeasure) with the experiences themselves. However, there are a variety of alternative accounts of this relationship. For example, given the evidence that depressed individuals may (at least in some cases) be more realistic about their situations (Taylor and Brown, 1994), it may be that self-reflection simply undermines individuals' ability to view their lives through rose-colored glasses. Furthermore, because the relationship between reflection and happiness has largely been correlational, it is unclear whether introspection causes unhappiness or unhappiness causes introspection.

There have been some experimental studies that are also supportive of the disruptive effects of introspection on hedonic experience, although these studies are also open to alternative interpretations. For example, there is an extensive literature suggesting that self-awareness (e.g., being put in the presence of a mirror), can cause aversive experiences due to discrepancies that individuals detect between their personal aspirations and the attainment of those aspirations (Duval and Wicklund, 1972). Although it has also been noted that self-awareness can occasionally lead to a more positive contrast between aspirations and attainments (e.g., Wicklund 1975), the more common finding is that self-awareness leads to a disappointing assessment and thus produces aversive states.

There are of course some important differences between the self-awareness induced by a mirror and the more specific introspection about a particular hedonic experience. For example, assessing how one feels about a particular experience does not necessarily require an assessment of whether one is living up to one's goals. Nevertheless, the general finding that self-awareness can often be

aversive is certainly consistent with the hypothesis that attending to the hedonic quality of a specific experience might undermine it.

Although relatively little research has examined experimentally the impact of hedonic introspection on the achievement of hedonic satisfaction *per se*, some studies have examined the related issue of how attending to one's perception of mirth influences the experience of humor. For example, Cupchik and Leventhal (1974) found that when individuals were asked to scrutinize their mirth response to humorous cartoons, they actually found them less funny. If one can ruin a joke by focusing too hard on how funny one finds it, it follows that hedonic introspection may similarly undermine other positive hedonic experiences. Clearly, what is needed are experimental studies that explicitly manipulate individuals' hedonic monitoring and then examine its impact on their hedonic experience. As will be discussed, we recently completed such an investigation. We will provide the preliminary evidence that hedonic assessment can, in fact, undermine hedonic experience. However, before considering this evidence we first introduce another central challenge to economic approaches that rely on the assumption that individuals attempt to maximize happiness, namely, that the pursuit of happiness may itself be self-defeating.

### 3. THE IMPACT OF THE PURSUIT OF HAPPINESS ON THE ATTAINMENT OF HAPPINESS

A central premise of much economic theory, and indeed a primary assumption of western culture as exemplified in the US Declaration of Independence, is the premise that the pursuit of happiness is a primary (and worthy) human goal. However, there are a number of reasons to suspect that the pursuit of happiness, at least when it is made the primary explicit motivation for behaviors, may actually be self-defeating. We will discuss three of them next.

#### 3.1. Faulty Theories of Happiness

One reason why pursuing happiness can be self-defeating is that people simply have faulty theories about what is likely to give them happiness. For example, there is considerable evidence that people underestimate their own tendency to adapt hedonically to continuing experiences, both positive and negative (e.g., Gilbert et al., 1998; Loewenstein and Frederick, 1997). Such a tendency may cause people to over-select goals that produce lasting material changes, such as an increase in income or status, in the mistaken belief that such changes will produce enduring increases in happiness. Initially, such goals may indeed produce happiness. However, as individuals adapt to their improved state, they may reach an equilibrium whereby they no longer experience the gain (Brickman and Cambell, 1971). However, having previously experienced pleasure from material gains, individuals may develop a habit of pursuing this goal above all others, without recognizing the habituation and decreasing marginal utility associated

with their further gains (for a formal model of this process, see Loewenstein et al., 2000). Consistent with this prediction, it has been found that individuals who see the accumulation of wealth as a primary goal are ultimately less happy than those who put less emphasis on material gains. For example, Kasser and Ryan (1993) gave participants a questionnaire that assessed the degree to which they (1) sought to accumulate wealth and (2) expected that they would significantly increase their wealth. Strikingly, participants who valued and/or expected increased wealth revealed markedly lower degrees of happiness as evidenced by a variety of measures including lower well-being and self-actualization and increased anxiety and depression. In a subsequent study that also included objectifiable consequences of global well-being, Kasser and Ryan (1996) found that individuals who focused on gaining wealth as a life goal showed more physical symptoms and lower daily affect relative to individuals who focused on the gaining of other goals, such as achieving psychological growth, having satisfying relationships with family and friends, and improving the world.

Of course, the fact that individuals who seek wealth tend to be less happy does not in itself prove that the explicit pursuit of happiness is the cause of their unhappiness. It might be that unhappy people are more motivated to change their state, and so they seek wealth as a way to improve their otherwise unhappy lives. And indeed there is some evidence that is consistent with such a contention. Specifically, Kasser and Ryan (1996) also found that individuals who have had troubled childhoods are more likely to view the explicit pursuit of wealth as a primary goal than individuals with a less problematic childhood.

### 3.2. Changing Goals

A second reason why the pursuit of happiness may be self-defeating is that it may cause people to treat activities not as ends in themselves, but rather as a means towards something else, namely the gaining of happiness. As previously noted, considerable research indicates that when individuals engage in activities for external reward (e.g., money) the activities lose their intrinsic appeal (for a review see Deci et al., 1999). Typically, in such studies the extrinsic reward is entirely distinct from the intrinsic hedonic value of the experience itself—for example, getting paid for a task that one would typically enjoy. Nevertheless, it seems plausible that if individuals view gaining happiness as something above and beyond the intrinsic appeal of the activity itself, such a motivation might similarly detract from the utility that is derived from an experience. For example, one might go to a concert with the primary motivation of genuinely wanting to listen to the music. Such a motivation would be unquestionably intrinsic and thus should lead to a positive experience. However, if a person goes to a concert with the explicit goal of gaining happiness, then the music itself is no longer the primary motivation for the task. In short, the hedonic value of an experience may be compromised to the degree that one is engaging in a task with the goal of achieving happiness, rather than with the goal of genuinely valuing the activity itself.

### 3.3. Monitoring Happiness

A third, closely related reason for why engaging in activities with the primary goal of achieving happiness may be self-defeating, is that it may encourage one to regularly monitor whether this goal is being achieved. As already noted, there are several reasons why regular monitoring might be detrimental including, reducing the amount of attention devoted to the activity itself, impairing sensitivity to the subtle positive features of the experience, and inducing unfavorable comparisons to a never attained goal state.

Whereas, incorrect theories about the determinants of happiness can cause people to engage in the wrong kinds of activities to maximize happiness, the latter two causes (changing goals, and monitoring) can produce a negative relationship between trying to be happy and being happy based simply on one's mental attitude. Both causes point to a 'catch-22' type of situation in which happiness is undermined by simply having the mindset of explicitly trying to be happy. The best evidence for this proposition comes from studies that examine the relationship between happiness and selfishness. One marker of individuals' focus on the explicit goal of achieving happiness involves the relative degree to which individuals put themselves before others. As Myers (2000) observes: 'Selfish people are, by definition, those whose activities are devoted to bringing themselves happiness.' However, although selfish individuals are seemingly devoted to the explicit attainment of their own happiness, various sources of evidence suggest that, like the pursuit of materialistic gains, engaging in life's activities with an eye to benefiting oneself may defeat the very goals that such actions are presumably meant to attain.

Two studies empirically supported the self-defeating aspects of perusing happiness: Using a questionnaire survey, Rimland (Myers, 2000) had participants list acquaintances and then rate them on a number of different dimensions including both selfishness and happiness. Rimland found that those individuals who were characterized as less selfish were also rated as happier than those who were characterized as more selfish. Of course, there are some problems with questionnaire studies of this sort, for example, participants might feel less positively towards their selfish acquaintances and so their low estimations of the happiness of their selfish peers might in effect reflect 'wishful thinking.' However, more controlled studies have led to similar conclusions. In a more controlled study, Konow (2000) had participants engage in a dictator game in which one participant is given the role of 'dictator' and is allowed to control the relative amount of resources allocated to himself and his teammates. Konow correlated participants' selfish behavior in this study with their self-reported happiness. Strikingly, individuals who devoted more resources to their teammates reported overall higher levels of happiness and life satisfaction relative to those who were more miserly in their allocations. This finding further supports the view that selfishness, although seemingly motivated by the explicit goal of putting one's own happiness above all else, is ineffective in leading to the attainment of this goal.

In sum, the initial findings are consistent with the proposition that the explicit pursuit of happiness can be self-defeating. There are, however, a number of theoretical and methodological issues that cloud exactly how we should interpret these findings. Most important, all of the studies that have examined the issue have been correlational in nature, demonstrating that people with particular proclivities, namely towards materialism and self-promotion, tend to be less happy. One interpretation of such findings is that the tendency to pursue happiness leads these individuals to be less happy. However, it is also possible that an initial tendency to be unhappy leads individuals to want to be happy and to select specific goals that, whether effective or ineffective, they believe will promote their own happiness. Clearly, additional studies are needed that more directly assess and manipulate the specific goal of maximizing happiness. In Section 4 we describe two such studies.

#### 4. PRELIMINARY INVESTIGATIONS OF THE PURSUIT AND ASSESSMENT OF HAPPINESS ON THE ACHIEVEMENT OF HAPPINESS

In the last several sections we have argued that both the attempts at monitoring happiness and attempting to maximize happiness may be self-defeating. Although we believe we have made a reasonable case for both of these claims, at present they remain tenable conjectures. Fortunately, however, they are testable, and we have begun to develop an empirical line of investigation to test them. In the following section, we briefly review two preliminary studies that explored the possible roles of explicit monitoring and maximizing on individuals' attainment of happiness. The first is an experimental investigation of the impact of monitoring and trying to be happy on the happiness that individuals derive from listening to music. The second is a field study in which we examined the relationship between individuals' efforts to be happy and their achievement of happiness in a real world situation that exemplifies the singular goal of maximizing happiness: New Year's Eve celebrations.

##### 4.1. The Impact of Monitoring and Effort on the Hedonic Experience Associated with Listening to Music

As noted above, most of the studies suggesting that reflection and the pursuit of happiness can reduce happiness have been correlational. Thus, one critical step in demonstrating the relationship between these variables and happiness is to show that the experimental manipulations of effort towards and monitoring of happiness can alter individuals' achievement of happiness. Toward this end, we conducted a study (Experiment 1) in which participants listened to music, with either (1) no instructions, (2) instructions to try to be happy, (3) instructions to monitor their happiness, or (4) instructions to both try to be happy and monitor their happiness. We used Stravinsky's *Rites of Spring* as our musical selection

because we expected its complexity and use of discordant tones to make listening to it hedonically ambiguous. Our reasoning was that individuals might find it more challenging to explicitly reflect on the quality of their hedonic experience when faced with a novel hedonically ambiguous sound. Accordingly, with hedonically ambiguous stimuli, individuals' theories, beliefs, and other factors unrelated to the experience itself may be particularly likely to color their assessments of their hedonic experience. Similarly, hedonically ambiguous music may be the most likely to frustrate individuals' direct attempts at making themselves happy. Thus, we reasoned that a hedonically ambiguous stimulus would be a sensible source to begin our search for reactive effects of efforts to monitor and maximize hedonic experience.

The participants first answered an elaborate series of questions that included a number of nine point likert scale mood measures. These included two critical questions: 'How happy do you feel right now?' and 'What is your mood right now?' In addition, the participants were shown a schematic face, that could be adjusted from frowning to smiling, and were asked to set the face to the level that reflected their current level of happiness. These various questions were embedded with a number of additional questions regarding their experience with and interest in music, to minimize the likelihood that the participants in the control group (no instruction condition) would infer that they were listening to the music to affect their mood. The participants then listened to the music. Those in the monitoring condition continually adjusted a movable scale (akin to those used in focus groups) to indicate their moment-to-moment happiness. Those in the try to be happy condition were asked to try to make themselves feel as happy as possible. The control subjects were simply asked to listen to the music. After listening to the music all the participants were once again given the various mood/happiness measures.

To assess the impact of our experimental manipulations on happiness, we examined the changes in individuals' responses to the critical happiness questions before and after listening to the music. The results of this investigation provide preliminary evidence that both monitoring and efforts to maximize happiness can actually impair the achievement of happiness. As can be seen in Figures 3.1 and 3.2, monitoring happiness significantly reduced happiness as indicated on both the numeric happiness scale and smile-face happiness measure. As can be seen in Figure 3.3, trying to be happy also reduced individuals' hedonic experience, albeit primarily by lowering the reported mood.

The results of this study are preliminary and need replications. Nevertheless, several cautionary conclusions seem appropriate. First the fact that monitoring happiness reduced individuals' ability to benefit from listening to music (as indicated by both the happiness and analogue face measures) suggests that vigilantly monitoring one's ongoing hedonic experience can undermine one's ability to actually gain happiness. Second, the fact that trying to be happy lowered the mood suggests that individuals' efforts to pursue happiness may have led to frustration, which undermined their ability to feel the pleasure that they

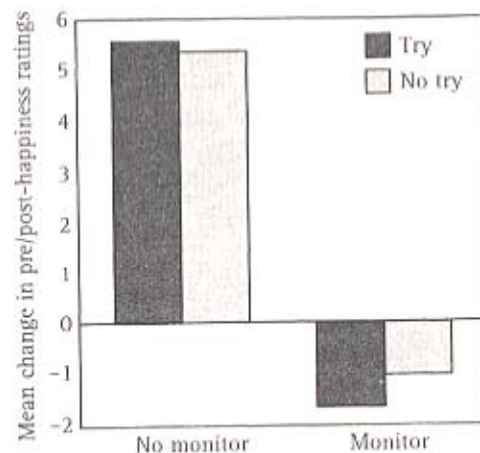


Figure 3.1. The effects of trying and monitoring on changes in the reported happiness

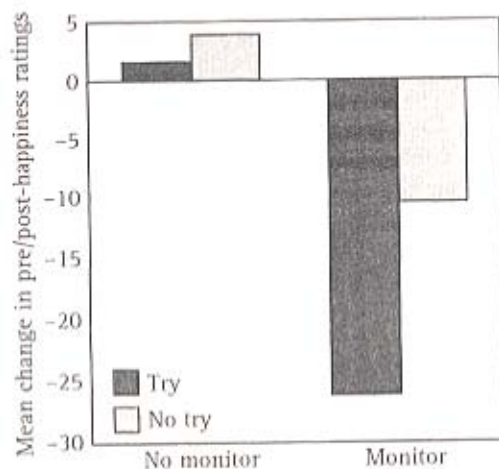


Figure 3.2. The effects of trying and monitoring on changes in the reported happiness with an analogue face measure

sought. Finally, the fact that the pattern of findings varied somewhat across the measures suggests that individuals' reports of their hedonic experience do not all derive from a single underlying experience. Rather, each term appears to induce a somewhat different calculus for assessing hedonic experience. Such a conclusion supports the contention that assessments of hedonic experience are filtered through the lens of reflective inferences, and therefore the context of the question may influence how hedonic experience is surmised and reported.

Of course, the suggestion that different measures might differentially tap hedonic experience and inference also highlights an important limitation of the

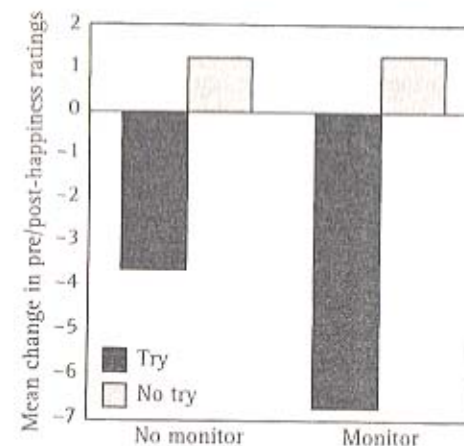


Figure 3.3. The effects of trying and monitoring on changes in the reported mood

present study. Although we have suggested that the monitoring of happiness undermines experienced happiness, it is also possible that monitoring happiness simply enabled the participants to derive a more accurate assessment of their actual hedonic experience. Accordingly, the difference in reported happiness between the monitoring and non-monitoring conditions might have been driven by the participants in the no monitoring condition who, when queried afterwards about their happiness, may have simply inferred that they should be happier since after all they had just listened to music. At present, it is not possible to determine whether monitoring happiness undermined individuals' happiness or enabled them to make a more realistic appraisal of their actual hedonic state. However, in either case, the net result was that individuals in the monitoring condition believed that they were less happy. Thus, whether monitoring reduces perceived happiness because it detracts from the experience, or because it forces individuals to make a more realistic appraisal of their hedonic state, its bottom line effect was to lower individuals' appraisals of their own happiness.

Clearly, the above study provides a mere glimpse of the interesting and potentially complex relationships that may exist between efforts to maximize and monitor happiness, and the ability to achieve it. Nevertheless, it supports our suggestion that attempts at maximizing and monitoring happiness can undermine the very happiness that people are attempting to discern and foster.

#### 4.2. The Costs of Trying to have a Good Time: New Year's Eve, 2000

If, as we have been suggesting, deliberate attempts at maximizing happiness can undermine individuals' ability to achieve happiness, then occasions that are designed with the singular purpose of maximizing happiness, might often

backfire. There are few occasions that are more likely to exemplify the singular goal of maximizing happiness than the New Year's Eve celebrations, particularly the millennium celebration of 2000 (the one starting on December 31st, 1999). The 2000 new year's celebration thus provided an excellent opportunity for us to explore the hypothesis that attempts to maximize happiness may be counter-productive. In the context of new year's celebration, we predicted that those individuals who devoted the greatest effort to having a good time, would actually have a less positive experience than those who were less singularly focused on maximizing their happiness.

To explore the hypothesized relationship between the pursuit and the achievement of happiness on New Year's Eve, we e-mailed friends, colleagues, and various list-serves, during the last week of December 1999, and asked them to visit our web site and answer a few questions about their plans for New Year's Eve. We asked them how large a celebration they were planning, how much they expected to enjoy New Year's Eve, and how much time and money they were expecting to spend on their New Year's Eve celebration.

About 475 people participated in our study. In the two months that followed, we e-mailed our participants again and asked them to answer the same questions about their actual experiences during New Year's Eve. For each individual, we took the difference between their response of how much they expected to enjoy New Year's Eve, and how much they reported to have enjoyed it after the fact. We used this difference measure as the basis for our analysis.

We first examined whether the magnitude of the celebration would influence the enjoyment of New Year's Eve compared with expectations. In our questions we asked participants whether they were expecting to have a small celebration, a bash, or to not celebrate at all. We analyzed the happiness difference as a function of these three categories. The results showed that in fact, most subjects (83 percent) were disappointed with their New Year's Eve celebration (mean disappointment 1.62 on a 10-point scale). More interestingly, the size of the planned celebration had an effect on the enjoyment difference ( $F(2,467) = 8.53, p < 0.001$ ). The effect of the planned celebration size was such that respondents who indicated they expected to have a bash were the most disappointed ( $M = -2.43$ ), followed by participants who expected a small celebration ( $M = -1.57$ ), followed by the participants who did not expect a celebration at all ( $M = -0.9$ ).

Next, we regressed the difference in enjoyment from New Year's Eve celebration on our respondents' anticipation of enjoyment, expected money spending, and expected time spending. The overall model was significant ( $F(3,265) = 99.48, p < 0.001$ ), and so were the coefficients for anticipation (coeff =  $-0.82, t = 15.175, p < 0.001$ ), and expected time spent on preparations (coeff =  $-0.27, t = 2.28, p = 0.023$ ). The coefficient for monetary expenses was not significant (coeff =  $-0.13, t = 1.09, p = 0.28$ ).

The results of this field study suggest that high expectation can lead to disappointment, and that spending time and effort (and perhaps money) on an event can increase dissatisfaction. Although, like Experiment 1, this study is clearly in

need of further replication and investigation, there are a number of preliminary implications that it suggests, particularly when it is considered in light of the findings of Experiment 1 and other recent psychological investigations. The observation that high expectations were associated with particular disappointment, supports a variety of recent studies indicating that individuals often have difficulty anticipating their future subjective states (Gilbert et al. 1998; Loewenstein and Schkade, 1999). Furthermore, although we cannot know for certain the relationship between high expectations and monitoring of the hedonic experience in the course of the celebration, it seems quite plausible that individuals with high expectations would, in fact, be more apt to monitor whether those expectations were being met. Thus, this study provides at least suggestive evidence that the spontaneous monitoring of hedonic experience (that is, outside the context of experimentally induced manipulations) also disrupts hedonic experience, and thus lends further credence to the conclusions of Experiment 1.

In addition to its potential implications for the disruptive effects of monitoring, the fact that those individuals who put the most energy into preparing their celebrations also reported the greatest disappointment complements the conclusion of Experiment 1, as it suggests that explicit efforts to achieve happiness can, at least in some situations, backfire. Moreover, because this study was conducted in the field without any experimental promptings, it suggests that the disruptive effects of pursuing happiness observed in Experiment 1 were not simply a byproduct of compelling individuals to pursue a goal that they themselves had not spontaneously initiated. Together, the findings of these two studies suggest that the explicit pursuit of happiness can be disruptive both when it is encouraged by an external agent (i.e., the experimenter) and when it is self-identified. These combined findings, thus, suggest that explicit attempts at maximizing happiness, at least under certain circumstances, may indeed represent an irrational approach for achieving this goal.

## 5. ECONOMIC AND PSYCHOLOGICAL IMPLICATIONS

We hope that the preceeding discussion has persuaded the reader that it is appropriate to entertain the likelihood that individuals can lack explicit awareness of the quality of their hedonic experience, and that efforts to monitor and maximize happiness can have deleterious consequences. Given the viability of these premises and the goals of this volume, it seems appropriate to consider their implications for both economics and psychology.

### 5.1. Implications for Economics

One of the reasons that the Benthamite utility was abandoned was that it could not be measured. As Jevons (1871) wrote, 'I hesitate to say that men will ever have the means of measuring directly the feelings of the human heart.... It is from the quantitative effects of the feelings that we must estimate their comparative amounts.' Economists wanted to predict behavior from the assumption

that people wanted to maximize happiness. But, unable to measure happiness, they were forced to infer what people thought promoted happiness from observing their behavior. Eventually, economists came to recognize the circularity in inferring happiness from behavior and then using it to predict behavior. Happiness, they reasoned, was a superfluous intervening construct, and economists reinterpreted utility as an index of preference. If the Benthamite utility is to be useful as an explanatory construct, there has to be some way of measuring it.

As we have discussed, there are significant problems associated with measuring hedonic experience. While it may some day be possible to measure well-being physiologically, those days are not yet here, so the only possible methods involve subjective self-reports. One problem with self-reports of global happiness that has received considerable attention is that, existing methods are highly unreliable and subject to myriad biases and measurement artifacts (see Schwarz and Strack, 1999, for an overview of the problems). However, our focus is somewhat different. We argue, that people may not be able to introspect accurately about their own level of happiness, and that doing so—that is, introspecting—can actually undermine happiness.

If individuals' reflective inferences can influence even their on-line appraisals, then we must be cautious in assuming that momentary hedonic appraisals necessarily capture their underlying hedonic experience (cf. Kahneman, 1999). Thus, the present analysis suggests that calls to return to Benthamite utilities that rely on self-report measures must be tempered by the inherent limitations of subjective reports, and the inherent impact that collecting self-reports may have on underlying experience. It seems likely that, under many situations, individuals may be able to provide an explicit assessment of their hedonic state that provides a reasonably accurate and non-reactive appraisal of their actual hedonic experience. However, the present analysis suggests that at least sometimes, perhaps particularly when individuals are faced with novel and/or hedonically ambiguous experiences, an explicit hedonic appraisal may misrepresent and/or alter actual experience. Clearly, additional research is needed to determine more precisely the specific situations in which explicit hedonic appraisal influences or distorts a hedonic experience. Only after such research is conducted will we be able to assess the full ramifications of the present analysis, for economic approaches that rely on the subjective reporting of hedonic experience.

In addition to the challenges of measurement, the present analysis also suggests another potential challenge to economic perspectives that assume that individuals should always attempt to maximize utility; namely, that such efforts may actually be counter-productive. This conjecture is based in part on the observation that explicit instructions to maximize happiness in our experimental study reduced happiness. Admittedly however, there is another alternative account of this finding that does not challenge the utility maximization view of economics. Specifically, by encouraging our participants to maximize their happiness we may have encouraged them to engage in an effortful strategy that undermined their utility maximization strategy. However, it should also be noted

that a comparable relationship between effort to maximize pleasure and actual achieved pleasure was also observed in our field study, in which we did not compel participants to engage in potentially non-optimal strategies. Thus, while it may well still be true that individuals can maximize utilities under some conditions, the present findings suggest that *deliberate* efforts to do so may lead individuals to engage in non-utility maximizing behaviors.

The above perspective thus suggests that there may be a cost to the adoption of economic models that encourage individuals to deliberately pursue their own self interest. Although economies may thrive when individuals act to maximize their self-interest, as Adam Smith argued, individuals who effortfully engage in such strategies may pay the price of a devaluation of the actual utilities that they derive from their gains. In short, whereas the productivity of economies may flourish when every individual seeks to maximize self-interest, the value of experienced utilities may decrease. Once the cost of this effortful focus of utility maximization is entered into the equation, a decreased emphasis on maximizing self-interest might actually increase net utilities even if it decreases the overall material output.

Although it might seem impossible to imagine a society in which the explicit pursuit of happiness was not the central driving force, it should be pointed out that there are cultures in which the explicit pursuit of happiness is not a central goal. For example, the orientation of Far Eastern cultures towards happiness is quite different from that of the Western societies. As Kityama and Markus (2000, p. 113) observe:

...in many American cultural contexts, the personal pursuit of happiness and the recognition of this pursuit by self and others are defining of the happiness itself... However, as exemplified in many East Asian cultures, happiness assumes a different subjective form—it is a state that emerges when taking a critical and disciplined stance to the personal self and thus engaging the sympathy of others.

In East Asian cultures, individuals hold the view, seemingly supported by the present analysis, that happiness does not require and is indeed undermined by the explicit pursuit of happiness. It must be noted that such cultures also often report *lower* overall levels of subjective well-being (e.g., Diener, 2000). However, as the present discussion indicates, we must be wary of taking subjective reports of well-being at face value. This is particularly true when comparing across cultures that may differ in the degree to which they view it as appropriate to acknowledge personal happiness. Despite the difficulties in comparing the actual experienced hedonics of members of different cultures, the examination of the East Asian cultures' orientations toward happiness suggest that an explicit focus on the pursuit of happiness is not a necessary element of human motivation.

## 5.2. Implications for Psychology

The present series of studies add to the growing body of evidence that thinking and reflection are not always productive activities. Although clearly invaluable

for many activities, reflection has now been shown to disrupt a variety of activities that involve the automatic or the difficult to verbalize experiences including: face recognition (e.g., Schooler and Engstler-Schooler, 1990), taste recognition (Melcher and Schooler, 1995), insight problem solving (Schooler et al., 1993), affective decision making (e.g., Wilson and Schooler, 1991), and analogical reasoning (Sieck et al., 1999). The present research adds to this body of research by demonstrating that reflection can also lessen hedonic experience. Of course, the disruptive effects of reflection demonstrated here and elsewhere must be kept in perspective. Clearly, it would be rash to make major decisions without carefully thinking through their consequences. Moreover, the modest disruptions resulting from reflection reported here and elsewhere must be tempered by the fact that the individuals were given only limited amounts of time to reflect, and had little training on how to organize their thoughts on the topic at hand. Indeed, research on the disruptive effects of verbal reflection has found that such effects are mediated by individuals' expertise in articulating their experience (Melcher, 2000; Melcher and Schooler, 1996; Ryan and Schooler, 1998). For example, whereas untrained wine drinkers' memory for a previously consumed wine can be disrupted by efforts at translating that memory into words, trained experts show no such disruption (Melcher and Schooler, 1996). Thus, whereas unstructured verbal reflection may be disruptive for individuals with little formal training in introspecting on their hedonic experience, genuine insight into personal utilities might be gained from a more trained or guided reflection.

Although the present analysis poses some potentially serious difficulties for the empirical science of hedonics, it also suggests some potentially useful directions for overcoming these difficulties. Specifically, once we recognize that hedonic assessments can vary in the degree to which they draw on underlying hedonic experience vs. inference, we can begin to develop measures that provide maximal sensitivity to experienced hedonics. As suggested by studies reviewed in this chapter, two such techniques may be to encourage individuals to make very quick hedonic judgments, and to provide them with a visual feedback (a mirror). Both of these approaches may enable individuals to give self-reports that show a greater sensitivity to their visceral hedonic experience. It may also be possible to develop new forms of self-report measures that enable individuals to give more accurate appraisals of their underlying hedonic experience (see Green et al., 1993).

Additional investigations might look profitably at the relationship between various self-report measures and psycho-physiological responses. As noted, various measures such as eye-blink reflexes and heart blood flow may reflect hedonic experience. If so, future research might examine the relationship between various self-report measures and these psycho-physiological measures such as cardio-vascular blood flow (Tomaka et al., 1997) or eyeblink startle response (e.g., Lang, 1995) in order to develop a maximally valid measure of experienced hedonics. In addition, there are other indirect measures of hedonics, such as affective priming (e.g., Bargh et al., 1992; Fazio et al., 1995) that may also circumvent often questionable hedonic inferencing processes. Perhaps, if a

combination of such indirect hedonic measures were used in concert, it might be possible to extract an underlying latent variable corresponding to hedonic experience. If so, it might be at long last possible to develop a science of utility that is unobstructed by many of the measurement problems outlined here (see Larsen and Fredrickson, 1999, for a discussion of the current limitations of indirect hedonic measurements).

More generally, the present analysis of the distinction between a hedonic experience and one's explicit meta-awareness of that experience illustrates the potentially broad applicability of the experiential consciousness/meta-consciousness distinction recently proposed by Schooler (in press). As Schooler points out, this distinction is exemplified by the case of mind wandering during reading. All readers are familiar with the experience of suddenly realizing that despite the best of intentions, one's mind has wandered, and one has no idea what they have been reading (like right now perhaps?). What is so striking about this experience is that although one consciously experiences the contents of the mind-wandering episode, one fails to notice that one's mind has wandered. Otherwise, one would have either stopped reading or stopped daydreaming. The fact that both activities continue demonstrates the absence of awareness that one is daydreaming, even though this is precisely what is occupying one's mind at the time. In short, the common everyday experience of mind wandering during reading illustrates that we can have an experience (i.e., experiential consciousness) without being explicitly aware (i.e., meta-conscious) of the fact that we are having that experience.

Within the present context, it seems quite reasonable to draw parallels between the experiential consciousness/meta-consciousness distinction as applied to daydreaming while reading and hedonics. Just as individuals may regularly daydream without realizing that they are doing so, so too individuals may regularly have hedonic experiences without explicitly apprehending their nature. Similarly, like catching one's mind wandering when it should not, the meta-awareness of hedonic experience may be most likely to occur when things are not going well. Indeed, perhaps, this is one additional reason why unhappy people tend to be introspective; unhappiness may be more likely to induce an explicit meta-awareness of one's hedonic state.

### 5.3. The Paradox of Introspection and the Pursuit of Happiness

As readers have likely surmised, our analysis suggests that there are several serious paradoxes surrounding the relationship between introspection, the pursuit of happiness, and actual hedonic experience. On the one hand, an explicit focus on the value of one's hedonic experience may both misrepresent and undermine its quality. On the other hand, a general lack of reflection may cause individuals to fail to recognize those experiences that provide them with the maximum utilities. A similar dilemma occurs with the pursuit of happiness, as the goal of maximizing utilities appears to be undermined by this very goal. Thus,

it might seem that with respect to both monitoring and maximizing hedonics, individuals are damned if they do and damned if they do not.

There are several considerations that may ultimately help to resolve these paradoxes. For example, it may be that although the explicit pursuit and monitoring of happiness can be disruptive, that these processes can be carried out effectively at a more tacit level. There is now a growing body of evidence that goals can be activated and maintained without explicit awareness (e.g., Bargh and Chartrand, 1999). There is also evidence that the automatic monitoring systems can search for violations of goals (Wegner, 1994) and regulate affective states (Carver and Scheier, 1990). Thus, the activation of the automatic hedonic maximization goals and monitoring systems may be one way to maximize happiness, unimpeded by the costs of excessive evaluation and deliberation.

While automatic monitoring and goal maintenance processes may help afford hedonic maximization, it seems certain that from time to time it is necessary to explicitly appraise hedonic experience and adjust one's goals accordingly. Like a pilot who generally relies on the highly efficient auto-pilot system, but occasionally must shift to manual control, hedonic regulation may be best optimized when individuals periodically engage in a willful monitoring and control of their hedonic state. Of course, as our analysis suggests, introspection does not ensure that one will get an accurate reading of their hedonic state. Nevertheless, there are certainly some situations (e.g., enjoying a glorious sunset, suffering through a miserable meal) in which individuals do seem quite capable of accurately appraising their experience. Thus, despite its potential costs and inaccuracies, if timed appropriately *intermittent attention* to one's hedonic situation may be critical for maximizing happiness. The challenge is determining when it is best to man the controls, and when it is better to simply enjoy the ride.

## REFERENCES

- Ariely, D. (1998). Combining experiences over time: The effects of duration, intensity changes and on-papers line measurements on retrospective pain evaluations. *Journal of Behavioral Decision Making*, 11, 19-45.
- Loewenstein, G.F., and Prelec, D. (2000). *Coherent arbitrariness: Duration-sensitive pricing of hedonic stimuli around an arbitrary anchor*. Working paper, Department of Social and Decision Sciences, Carnegie Mellon University, Pittsburgh.
- and Zauberman, G. (2000). On the making of an experience: The effects of breaking and combining experiences on their overall evaluation. *Journal of Behavioral Decision Making*, 13, 219-32.
- Bargh, J.A., Chaiken, S., Gendler, R., and Pratto, F. (1992). The generality of the attitude activation effect. *Journal of Personality and Social Psychology*, 62, 893-912.
- and Chartrand, T.L. (1999). The unbearable automaticity of being. *American Psychologist*, 54, 462-79.
- Becker, G.M., DeGroot, M.H., and Marschak, J. (1963). An experimental study of some stochastic models for wagers. *Behavioral Science*, 8, 199-202.

- Bem, D.J. (1967). Self-perception: An alternative interpretation of cognitive dissonance phenomena. *Psychological Review*, 74(3), 183-200.
- (1972). Self-perception theory. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 6). New York: Academic Press.
- Brickman, P. and Campbell, D.T. (1971). Hedonic relativism and planning the good society. In M.H. Appley (Ed.), *Adaptation-level theory*. New York: Academic Press.
- Csikszentmihalyi, M. (1999). If we are so rich, why aren't we happy? *American Psychologist*, 54(10), 821-7.
- Cupchik, G.C. and Leventhal, H. (1974). Consistency between expressive behavior and the evaluation of humorous stimuli: The role of sex and self-observation. *Journal of Personality and Social Psychology*, 30, 429-42.
- Damasio, A.R. (1994). *Descartes' error: emotion, reason, and the human brain*. New York: G.P. Putnam.
- Deci, E.L., Koestner, R., and Ryan, R.M. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin*, 125(6), 627-58.
- Diener, E. (2000). Subjective well-being: The science of happiness and a proposal for a national index. *American Psychologist*, 55, 34-43.
- Dutton, D.G. and Aaron, A.P. (1974). Some evidence for heightened sexual attraction under conditions of high anxiety. *Journal of Personality and Social Psychology*, 30, 510-17.
- Duval, S. and Wicklund, R.A. (1972). *A theory of objective self-awareness*. New York: Academic Press.
- Fazio, R.H. (1987). Self-perception theory: A current perspective. In M.P. Zanna, J.M. Olson, and C.P. Herman (Eds.), *Social influences: The Ontario Symposium* (Vol. 5, pp. 129-50). Hillsdale: Erlbaum.
- Jackson, J.R., Dunton, B.C., and Williams, C.J. (1995). Variability in automatic activation as an unobtrusive measure of racial attitudes: A bona fide pipeline? *Journal of Personality and Social Psychology*, 69, 1013-27.
- Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford: Stanford University Press.
- and Carlsmith, J.M. (1959). Cognitive consequences of forced compliance. *Journal of Abnormal and Social Psychology*, 58, 203-10.
- Gilbert, D.T., Pinel, E.C., Wilson, T.D., Blumberg, S.J., and Wheatley, T.P. (1998). Immune neglect: A source of durability bias in affective forecasting. *Journal of Personality and Social Psychology*, 75(3), 617-38.
- Green, B.G., Shaffer, G.S., and Gilmore, M.M. (1993). Derivation and evaluation of a semantic scale of oral sensation magnitude with apparent ratio properties. *Chemical Senses*, 18(6), 683-702.
- Hicks, S.J. R. (1976). Some questions of time in economics. In A.M. Tang, F.M. Westfield, and J.S. Worley (Eds.), *Evolution, welfare, and times in economics: Essays in honor of Georgescu Roegen* (2nd ed.). Lexington: Lexington Books.
- Ingram, R.E. (1990). Self-focused attention in clinical disorders: Review and a conceptual model. *Psychological Bulletin*, 109, 156-76.
- James, W. (1884). What is an emotion. *Mind*, 9, 188-205.
- Jevons, W.S. (1871). *Theory of political economy*. London: Macmillan.
- Kahneman, D. (1999). Objective happiness. In D. Kahneman, E. Diener, and N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology* (pp. 3-25). New York: Russell Sage.

- Kahneman, D. and Varey, C. (1991). Notes on the psychology of utility. In J. Elster and J. E. Roemer (Eds.), *Interpersonal comparisons of well-being: Studies in rationality and social change* (pp. 127-63). New York: Cambridge.
- Wakker, P.P., and Sarin, R. (1997). Back to Bentham? Explorations of experienced utility. *The Quarterly Journal of Economics*, May, 375-405.
- Kasser, T. and Ryan, R.M. (1993). A dark side of the American dream: Correlates of financial success as a central life aspiration. *Journal of Personality and Social Psychology*, 65(2), 411-422.
- and — (1996). Further examining the American dream: Differential correlates of intrinsic and extrinsic goals. *Journal of Personality and Social Psychology*, 22(3), 280-7.
- Kityama, S. and Markus, H.R. (2000). The pursuit of happiness and the realization of sympathy: Cultural patterns of self, social relations, and well-being. In E. Diener and Eukook Suh (Eds.), *Culture and subjective well-being*. Boston: MIT Press.
- Konow, J. (2000). Fair shares: Accountability and cognitive dissonance in allocation decisions. *American Economic Review*, 90(4), 1072-91.
- Lane, R.D., Reiman, E.M., Bradley, M.M., Lang, P.J., L., A.G., Davidson, R.J., and Schwartz, G.E. (1997). Neuroanatomical correlates of pleasant and unpleasant emotion. *Neuropsychologia*, 35(11), 1437-44.
- Lang, P. (1995). The emotion probe: Studies of motivation and attention. *American Psychologist*, 50, 372-85.
- Larsen, R.J. and Fredrickson, B.L. (1999). Measurement issues in emotion research. In D. Kahneman, E. Diener, and N. Schwarz (Eds.), *Well-being: The Foundations of hedonic psychology* (pp. 40-60). New York: Russell Sage Foundation.
- Lazarus, R.S. (1984). On the primacy of cognition. *American Psychologist*, 39(2), 124-9.
- Lepper, M.R., Greene, D., and Nisbett, R.E. (1973). Undermining children's intrinsic interest with extrinsic reward. *Journal of Personality and Social Psychology*, 28, 349-53.
- Lewin, S.B. (1996). Economics and psychology: Lessons for our own day from the early twentieth century. *Journal of Economic Literature*, 34(3), 1293-323.
- Little, I.M.D. (1957). *A critique of welfare economics* (2nd ed.). Oxford: Clarendon Press.
- Loewenstein, G. (1992). The fall and rise of psychological explanations in the economics of intertemporal choice. In G. Loewenstein and J. Elster (Eds.), *Choice over time* (pp. 3-34). New York: Russell Sage Foundation.
- Loewenstein, G. (1996). Out of control: Visceral influences on behavior. *Organizational Behavior and Human Decision Processes*, 65, 272-92.
- and Frederick, S. (1997). Predicting reactions to environmental change. In M. H. Bazerman and D.M. Messick (Eds.), *Environment, ethics, and behavior: The psychology of environmental valuation and degradation* (pp. 52-72). San Francisco: The New Lexington Press/Jossey-Bass.
- O'Donoghue, T., and Rabin, M. (2000). *Projection bias in the prediction of future utility*. Working paper, Department of Social and Decision Sciences, Carnegie Mellon University, Pittsburgh.
- and Schkade, D. (1999). Wouldn't it be nice? Predicting future feelings. In D. Kahneman, E. Diener, and N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology*. New York: Russell Sage.
- Lyubomirsky, S. and Lepper, H.S. (1999). A measure of subjective happiness: Preliminary reliability and construct validation. *Social Indicators Research*, 46, 137-55.

- Melcher, J. and Schooler, J.W. (1996). The misremembrance of wines past: Verbal and perceptual expertise differentially mediate verbal overshadowing of taste. *Journal of Memory and Language*, 35, 231-45.
- Musson, F.F. and Alloy, L.B. (1988). Depression and self-directed attention. In L.B. Alloy (Ed.), *Cognitive processes in depression* (pp. 193-220). New York: Guilford Press.
- Myers, D.G. (1992). *The pursuit of happiness: Who is happy—and why*. New York: William Morrow.
- (2000). *The American paradox: Spiritual hunger in an age of plenty*. New Haven: Yale University Press.
- Olson, J. (1990). Self-inference processes in emotion. In J. Olson and M. Zanna (Eds.), *Self-inference: The Ontario symposium* (Vol. 6, pp. 17-42). Hillsdale: Lawrence Erlbaum.
- Page, A.N. (1968). *Utility theory: A book of readings*. New York: Wiley.
- Reisenzein, R. (1983). The Schachter theory of emotion: Two decades later. *Psychological Bulletin*, 94, 239-64.
- Ryan, R.S. and Schooler, J.W. (1998). Whom do words hurt? Individual differences in susceptibility to verbal overshadowing. *Applied Cognitive Psychology*, 12, 105-25.
- Schachter, S. and Singer, J.E. (1962). Cognitive, social and physiological determinants of emotional state. *Psychological Review*, 69, 379-99.
- Scheier, M.F. and Carver, C.S. (1977). Self-focused attention and the experience of emotion: Attraction, repulsion, elation, and depression. *Journal of Personality and Social Psychology*, 35(9), 625-36.
- Schooler, J.W. (2001). Discovering memories in the light of meta-awareness. *Journal of Aggression, Maltreatment and Trauma*, 4, 105-36.
- (2002). Representing consciousness: Dissociations between consciousness and meta-consciousness. *Trends in Cognitive Science*, 6, 339-44.
- and Engstler-Schooler, T.Y. (1990). Verbal overshadowing of visual memories: Some things are better left unsaid. *Cognitive Psychology*, 17, 36-71.
- Ohlsson, S. and Brooks, K. (1993). Thoughts beyond words: When language overshadows insight. *Journal of Experimental Psychology*, 122, 166-83.
- and Wilson, T.W. (1991). When words hurt: The disruptive effects of verbally analyzing reasons. *Proceedings of the Society for Consumer Psychology*, 29.
- Schwarz, N. (1987). *Stimmung als information: Untersuchungen zum einfluss von stimmungen auf die Bewertung des eigenen Lebens*. Berlin: Springer.
- and Clore, G.L. (1983). Mood, misattribution and judgments of well-being: Informative and directive functions of affective states. *Journal of Personality and Social Psychology*, 45, 513-23.
- and Strack, F. (1999). Reports of subjective well-being: Judgmental processes and their methodological implications. In D. Kahneman, E. Diener, and N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology*. New York: Russell Sage.
- Strack, F., Koomer, D., and Wagner, D. (1987). Soccer rooms, and the quality of your life: Mood effects on judgments of satisfaction with life in general and with specific life domains. *European Journal of Social Psychology*, 17, 69-79.
- Sen, A. (1973). Behaviour and the concept of preference. *Economica*, 40, 241-59.
- Sieck, W.R., Quinn, C.N., and Schooler, J.W. (1999). Justification effects on the judgment of analogy. *Memory and Cognition*, 27, 844-55.
- Stigler, G. (1965). *The development of utility theory, Essays in the history of economics*. Chicago: University of Chicago Press.

- and Becker, G. (1977). De gustibus non est disputandum. *American Economic Review*, 67, 76–90.
- Strack, F., Martin, L.L., and Stepper, S. (1988). Inhibiting and facilitating conditions of the human smile: A nonobtrusive test of the facial feedback hypothesis. *Journal of Personality and Social Psychology*, 54(5), 768–77.
- Taylor, S.E. and Brown, J. (1994). Positive illusion and well-being revisited: Separating fact from fiction. *Psychological Bulletin*, 103, 193–210.
- Tomaka, J., Blascovich, J., Kibler, J., and Ernst, J.M. (1997). Cognitive and physiological antecedents of threat and challenge appraisal. *Journal of Personality and Social Psychology*, 73, 63–72.
- Veenhoven, R. (1988). Utility of happiness. *Social Indicators Research*, 20, 333–54.
- Wenzlaff, R.M. and Wegner, D.M. (2000). Thought suppression. *Annual Review of Psychology*, 51, 59–91.
- Wegner, D.M. (1994). Ironic processes of mental control. *Psychological Review*, 101, 34–52.
- Erber, R., and Zanakos, S. (1993). Ironic processes in the mental control of mood and mood related thought. *Journal of Personality and Social Psychology*, 6, 1093–104.
- Wicklund, R. (1975). Objective self-awareness. In L. Berkowitz (Ed.), *Advances in experimental social psychology*. New York: Academic Press.
- Wilson, T.D. (1990). Self-persuasion via self-reflection. In J. Olson and M. Zanna (Eds.), *Self-inference: The Ontario symposium* (Vol. 6, pp. 43–67). Hillsdale: Lawrence Erlbaum.
- Dunn, D.S., Bybee, J.A., Hyman, D.B., and Rotondo, J.A. (1984). Effects of analyzing reasons on attitude-behavior consistency. *Journal of Personality and Social Psychology*, 47, 5–16.
- Lindsey, S. and Schooler, T.Y. (2000). A model of dual attitudes. *Psychological Review*, 107(1), 101–26.
- Lisle, D.J., Schooler, J.W., Hodges, S.D., Klaaren, K.J., and LaFleur, S.J. (1993). Introspecting about reasons can reduce post-choice satisfaction. *Personality and Social Psychology Bulletin*, 19, 331–9.
- and Schooler, J.W. (1991). Thinking too much: Introspection can reduce the quality of preferences and decisions. *Journal of Personality and Social Psychology*, 60, 181–92.
- Zajonc, R.B. (1984). On the primacy of affect. *American Psychologist*, 39(2), 117–23.
- Zillman, D. (1978). Attribution and misattribution of excitatory reactions. In J.H. Harvey, W.J. Ickes, and R.F. Kidd (Eds.), *New directions in attribution research* (Vol. 2, pp. 335–68). Hillsdale: Lawrence Erlbaum.

## PART II

IMPERFECT SELF-KNOWLEDGE AND  
THE ROLE OF INFORMATION