

Regret and Elation Following Action and Inaction: Affective Responses to Positive Versus Negative Outcomes

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In their research on decision under uncertainty, Kahneman and Tversky (1982a) examined whether, given the same negative outcome, there is any difference in the experience of regret, depending on whether the outcome follows action or inaction. This study attempted to replicate Kahneman and Tversky's (1982a) finding of greater regret for action than inaction and to determine whether this pattern extends to the parallel case of joy over happy outcomes, to different life domains, and to both genders. Through a vignette experiment, the previous finding of a strong tendency to imagine greater regret following action than inaction was replicated. The same pattern was observed in the case of joy over positive outcomes. In two of the three vignettes presented, this "actor effect" was stronger for negative than for positive outcomes. In a third vignette, explicit knowledge of a missed negative outcome seems to have magnified the usual joy over having made a good decision, causing the expected joy over acting and succeeding to rise to the typically high level of regret over acting and failing. Suggestions regarding the future study of these issues are offered.

Through the ages, *regret*—the sense of sorrow, disappointment, or distress over something done or not done—has received literary exploration in a variety of genres, ranging from the biblical tale of Lot's wife through Beckett's absurdist play *Krapp's Last Tape*. But with the exception of a cameo appearance in cognitive dissonance theory (Brehm & Wicklund, 1970; Festinger, 1957, 1964; Festinger & Walster, 1964), regret has been neglected as a subject of scientific inquiry. Beginning in the 1980s, however, there has been a growing interest in the study of regret within the quantitative social sciences.

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This was first evidenced by the emergence of regret theories within the tradition of formal economic decision theory. In general, regret theories assume that the value of choosing something is dependent on the nature of the things simultaneously rejected (Loomes & Sugden, 1982, p. 821). This assumption requires the addition of a regret term to the classical utility function long used to predict decisions (Bell, 1981; Loomes & Sugden, 1982; Sage & White, 1983). According to a typical regret theory (Sage & White, 1983), the expected utility of choice X is a multiplicative function of the probability of X and the value of X plus or minus the amount of regret for not- X , some possible alternative not chosen. Certain of these theories (e.g., Bell, 1981) define regret quite broadly to include both the reaction to feeling one has made the wrong decision and the reaction to feeling one has made the right decision. The design of the research reported in this article reflects this broad definition of regret, inasmuch as it incorporates an examination of both types of cases. However, the definitions of terms used in this article correspond to the common parlance, in which regret refers only to the affective reaction to unfavorable outcomes and another term—for example, *joy* or *elation*—refers to the reaction to felicitous outcomes.

Psychological theory has been most directly informed by regret theory through the work of Kahneman and Tversky (1982a, 1982b). Among the questions these investigators have empirically addressed is the following: Given the same unfortunate outcome, do people experience more regret for having attained the outcome via action rather than inaction? Through vignette studies, Kahneman and Tversky (1982a) found that most people do imagine experiencing more regret for outcomes attained via action than via inaction. My research takes this issue as its starting point and attempts to replicate in a number of different scenarios this finding of greater regret for action than inaction, as well as to determine whether this pattern extends to the parallel case of joy over happy outcomes, and to males and females alike.

REGRET FOR ACTION VERSUS INACTION

Recently, Kahneman and Tversky (1982a) found that most people imagine greater regret for acts than for nonacts. In this research subjects were presented with written vignettes describing a situation in which the same negative outcome was attained in two different ways—that is, through action or through inaction. An example of such a vignette follows:

Paul owns shares in Company A. During the past year he considered switching to stock in Company B, but he decided against it. He now finds that he would have been better off by \$1,200 if he had switched to the stock of Company B.

George owned shares in Company B. During the past year he switched to stock in Company A. He now finds that he would have been better off by \$1,200 if he had kept his stock in Company B.

Among Kahneman and Tversky's subjects there was a high degree of agreement that the person who acted (in this case, George) would feel more regret than the

person who chose not to act (in this case, Paul).

Kahneman and Miller (1986) explained these results as follows: The intensity of regret depends on expectations regarding what is normal and what is abnormal, and on the associated ease with which alternative scenarios are mentally constructed or undone. They suggest that action is considered by most people to be unusual relative to inaction; as a consequence, following action, it is relatively easy to imagine an alternative (i.e., inaction) that restores the antecedent conditions to a more normal state. The undesirable situation in which the alternative (inaction) is easy to imagine will thus be regretted more than the situation in which the alternative (action) is more difficult to imagine.

There are other explanations of the finding that acts are often more regrettable than failures to act. First, acts appear to be more noticeable or more salient than nonacts. Experiments in which human and animal subjects were exposed to both positive and negative instances in order to distinguish between two stimuli, to form a concept, or to solve problems have yielded evidence of a general underutilization of negative instances or nonoccurrences (Fazio, Sherman, & Herr, 1982; Hearst, 1984a, 1984b; Jenkins & Sainsbury, 1970; Sainsbury, 1973; Wason & Johnson-Laird, 1965). This effect also plays a role in social cognition. Employing a self-perception paradigm, Fazio et al. (1982) found that people make greater use of their acts than their nonacts to infer their own attitudes. One possible explanation for these effects is that because nonoccurrences are less salient than occurrences, they tend to be less available for further utilization during thinking or problem solving (Ross, 1977; Nisbett & Ross, 1980). Another explanation for the underutilization of nonoccurrences focuses on the perceived or actual lack of informativeness of nonoccurrences relative to occurrences (Fazio et al., 1982; Hearst, 1984a, 1984b; Nisbett & Ross, 1980). A third explanation suggests that a predisposition to notice and to respond to events rather than to nonevents may flourish due to its evolutionary success (Newman, Wolff, & Hearst, 1980). Finally, according to Weiner's (1980) attributional theory of emotion, the stronger the personally causal connection between an antecedent and a consequence, the stronger the affective impact (e.g., regret or elation) of the consequence. If this is so, then we would expect the affect following action typically to be more intense than the affect following inaction, because in the case of inaction, it is generally easier to attribute the outcome to whatever external event precedes it than to oneself.¹

Taken together, these investigations indicate that acts and nonacts, if not ontologically or logically distinct, are psychologically distinguishable. Moreover, they suggest greater regret for acts than for nonacts.

However, it also seems plausible that the finding of greater regret over acts than nonacts (Kahneman & Tversky, 1982a) might be situation- or stimulus-specific. For example, following the death of a loved one, it seems as common to hear expressions of regret for things not done ("not telling him I loved him") as for things done. This study addresses the issue of the generality of the action-

regret link in an exploratory fashion by examining the relative intensity of the affect attributed to target individuals making decisions in three different life domains. In addition, this study explores whether the emotional impact of action versus inaction resulting in positive or negative outcomes is the same for men and women, a question not addressed by previous research.

ASYMMETRIES BETWEEN POSITIVE AND NEGATIVE LIFE EVENTS

As mentioned earlier, formal theories of regret often assume that the value of a decision is reduced or augmented by a "regret term," in which regret is broadly defined as either the added displeasure or the added pleasure that occurs as a result of comparing an actual outcome with another possible outcome. These theories rest on the presupposition that both kinds of "regret" function according to parallel principles. But this assumption has not been subjected to empirical test. And there is reason to suspect that regret over less-than-ideal outcomes does *not* operate in a symmetrical manner vis-à-vis joy over better-than-expected outcomes.

Instead, there seems to be a strong proclivity for people to assign greater weight to negative than to positive things. In a review of this so-called negativity effect, Kanouse and Hanson (1971) identify three types of instances in which people have been seen to weigh negative things more heavily than positive things. First, negative, or pejorative, traits have greater impact on impression formation than positive, or desirable, traits (Anderson, 1965; Birnbaum, 1972; Feldman, 1966; Fiske, 1980). Second, when people are imagining how hypothetical others evaluate an object, they weigh negative information more heavily than positive information (Abelson & Kanouse, 1966). Finally, when people are making real decisions in betting or life-dilemma situations, they weigh potential losses more heavily than potential gains (Atthowe, 1960; Kogan & Wallach, 1967; Rettig & Rawson, 1963; Slovic & Lichtenstein, 1968). Also pertinent to this discussion is Tversky and Kahneman's (1981) discovery that the framing of outcome valence influences the amount of risk people are willing to take, such that decisions involving gains tend to be risk averse, whereas decisions involving losses are often risk taking.

Explanations for the disproportionate effect of negative relative to positive matters include: (1) the greater salience and informational value of negative things (see Fiske, 1980; Kanouse & Hanson, 1971) and (2) the greater cost associated with aversive conditions relative to the benefits of positive conditions (Kanouse & Hanson, 1971). Findings such as these suggest that whatever the pattern of regret following acts versus nonacts, it is likely to be more powerful than the parallel pattern of joy over *happy* outcomes attained via acts versus nonacts.

In sum, this study tested the following hypotheses: (1) People imagine greater regret over unhappy life events following acts than following failures to act; (2)

likewise, people imagine greater elation over happy life events following acts than following failures to act; (3) regret over unsuccessful acts is stronger than joy over successful acts; (4) these patterns obtain in different life domains; and (5) these patterns obtain for men and women alike.

METHOD

Subjects

Ninety-six undergraduates, 56 females and 40 males, at the University of Michigan were presented with three vignettes designed to reproduce the form but not the content of the scenario used by Kahneman and Tversky (1982a) in their study of regret following acts versus nonacts. These students ranged in age from 17 to 22, with a mean age of 18.62.

Stimulus Materials

Following Kahneman and Tversky (1982a), the first vignette presented in this study concerned two students who received a low grade in the same section of a biology course; one student had taken active steps to get into that particular section, and the other student simply remained in the section to which he had been assigned. This vignette read as follows:

Paul enrolled in Section 1 of Biology 101; his roommate enrolled in Section 2. At the beginning of the term, Paul considered switching to Section 2, but decided against it. The term is over and Paul just learned he got a D in the course. His roommate got a B.

George and his roommate enrolled in Section 2 of Biology 101. At the beginning of the term, George switched to Section 1. The term is over and George just learned that he got a D in the course. His roommate got a B in Section 2.

Subjects were asked to answer the question: "Who feels worse about his own section choice? Paul or George?" Subjects' responses to this question served as the dependent variable measuring the judgment that the actor (George) or the nonactor (Paul) would experience more regret over the unfortunate outcome.

The other vignettes presented in this study had to do with: (1) being permanently laid off a job after either remaining in one's original job or switching jobs; (2) having a Florida vacation ruined by rain after either returning to a favorite vacation spot or taking action to try a new location. These vignettes follow:

John worked for United Van Lines. Last year he considered switching to Allied Van Lines but decided against it. A month ago John was permanently laid off.

Dave worked for Allied Van Lines. Last year he switched to United Van Lines. A month ago Dave was permanently laid off. Who feels more regret about his job decision? John or Dave?

For years the Lowell family has vacationed in Key West, Florida, during the last 10 days of December. This year they considered vacationing in Sarasota, Florida, but decided to return to Key West after all. Unfortunately, it rained all 10 days in Key West; Sarasota was mostly dry.

For years the Sayer family has vacationed in Sarasota, Florida, during the last 10 days of December. This year they decided to vacation in Key West instead. Unfortunately, it rained all 10 days in Key West; Sarasota was mostly dry. Who feels more regret about their vacation decision? The Lowells or the Sayers?²²

Procedure

In order to investigate the question of whether the reaction to a positive outcome parallels the reaction to a negative outcome, half the sample ($n = 48$) received vignettes identical to those just discussed except that the outcomes were favorable. For example, in the vignette about the students in the biology course, both Paul (who failed to act) and George (who acted) received an A in the course. In this outcome condition, the dependent measure was the subjects' judgment of who felt *better*—the individual who had attained the happy outcome through action or the one who had attained the outcome through inaction.

All subjects read all three vignettes. The order of presentation of vignettes within booklets was constant: course, job, and vacation. The order of presentation of positive and negative outcomes was counterbalanced and varied across two booklets. Analysis indicated that order of presentation of outcome had no effect on respondents' evaluations of the emotional reaction of the target person ($F[1, 92] = 0.01, p = .98$).

Booklets containing these experimental stimuli were randomly distributed to subjects within four classroom groups. Through this procedure the positive and negative forms of each vignette were evenly distributed across classroom sections ($\chi^2[3, N = 96] = .27, p = .96$) and across sex of subject ($\chi^2[1, N = 96] = .69, p = .41$).

RESULTS

Table 1 presents a summary of respondents' attributed affective reactions to positive and negative outcomes attained via action versus inaction. As the right half of Table 1 reveals, there is clear support for Kahneman and Tversky's (1982a) original finding: Most respondents imagined greater regret for negative outcomes following *action* than following *inaction*. On the average, over 8 of 10 respondents felt that the person who acted would regret a negative outcome more than the one who failed to act. In order to simplify the description of these results, hereafter I will refer to this as the *actor preference* or the *actor effect*.

This pattern was also observed in respondents' reactions to vignettes that had *positive* outcomes (see left half of Table 1). On the average, nearly three-quarters

TABLE 1 Frequencies of Attributed Affective Reactions to Positive and Negative Outcomes Attained via Action^a

<i>Vignette</i>	<i>Positive Outcome</i> (<i>n</i> = 48)	<i>Negative Outcome</i> (<i>n</i> = 48)
Course	67	88
Job	67	79
Vacation	85	81
All vignettes	73	83

a. Numbers represent the percentage of subjects within each outcome condition who rated *active* target person as feeling better/worse.

of all respondents imagined that the individual who attained the favorable outcome through action would feel more elated than the person who reached the same outcome through inaction. However, in two of the three vignettes presented the actor effect was less pronounced than it was when the outcomes were negative.

These results were also analyzed in an alternative manner that (1) highlighted the magnitude of preference for actor relative to nonactor and (2) permitted parametric testing of the degree of contribution of the independent variables (sex, outcome valence, vignette) taken singly and in interaction with one another. When subjects responded that the *actor* would feel better (or worse), they were assigned a score of 2; when subjects responded that the *nonactor* would feel better (or worse), their score was 1. These scores were subjected to a repeated measures analysis of variance, in which the repeated measure was vignette and the between-subjects factors were sex and form (order of presentation of positive and negative outcomes).

As predicted, respondents imagined significantly greater regret on the part of a target person who took action prior to a negative outcome than on the part of a target person for whom the same outcome followed inaction, $t(47) = 6.8, p < .001$. Also as expected, the same pattern was observed in the positive conditions: Respondents imagined greater joy on the part of a target person whose action was followed by a felicitous outcome than on the part of a person for whom the same outcome followed inaction, $t(47) = 4.5, p < .001$. Unexpectedly, there was no significant main effect of outcome valence on the emotional reaction to life outcomes: that is, the actor effect was not consistently stronger in the case of negative than positive outcomes. Nor was there a significant main effect of vignette. However, there was a significant interaction between outcome valence and vignette ($F[1, 184] = 4.58, p = .01$), such that in the course and job vignettes the typical actor effect was stronger for negative than for positive outcomes, but in the vacation vignette the actor effect was equivalent for positive and negative outcomes.

Both males and females showed the typical actor effect observed in the sample as a whole. However, this pattern was marginally stronger for males than

for females, $F(1, 92) = 3.80, p = .0544$). There were no significant interactions between sex and outcome valence, between sex and vignette, or among sex, outcome valence, and vignette.

DISCUSSION

Emotional Reactions Following Action Versus Inaction

In general, we imagine feeling both greater regret over unfavorable outcomes following action than following inaction and also greater elation over favorable outcomes following action than following inaction. It was no surprise to find that people anticipate greater regret for *undesirable* events following action than inaction: These results closely reproduce those earlier reported by Kahneman and Tversky (1982a). As discussed earlier, Kahneman and Miller (1986) suggest a norm-based explanation for these findings, such that *inaction* is assumed to be the norm, and action is viewed as a deviation from the norm and therefore more readily wished away or regretted. Similarly, given the premium placed on initiative and action in Western civilization, the finding that U.S. university students anticipated greater pleasure over *successful* outcomes achieved through action than through inaction is also convincing. It is hard to think of a counterexample.

The generality of the actor effect—which was observed for both positive and negative outcomes, in multiple domains, and across gender—is impressively robust. However, the present results suggest a number of refinements that call for further discussion.

Gender Effects in Emotional Reactions to Action Versus Inaction

The unexpected gender difference in actor effect—that is, in the magnitude of the emotional reaction to successful and unsuccessful life outcomes anticipated on the part of actors versus nonactors—requires explanation. First of all, it should be kept in mind that there was no gender difference in kind of reaction but only in degree; both males and females expected the actor to feel better about success and worse about failure than the nonactor, but males showed a more marked actor effect than females. Nonetheless, the gender difference in magnitude presents an intriguing puzzle in which issues about activity and passivity, joy and regret, combine in suggestive ways.

In this and other cultures, males are expected to be more active than females. Until recently, this male/female dichotomy, variously identified in terms of instrumentality/expressiveness (Parsons & Bales, 1955) and agency/communism (Bakan, 1966), had the status of a universal truth. Research calls into question a naturalistic interpretation for gender differences in activity level, because it is not until after one year of age that these differences appear (Maccoby & Jacklin, 1974). Thus any observed gender differences in activity are

most probably due to environmental factors, such as the imposition of greater restrictions on activity by female children than male children. In any case, the existence of later-life gender differences in activity level may underlie concomitant gender differences in emotional reactions to life outcomes attained through action versus inaction.

It has been observed that after 18 months of age, boys are more aroused by frustration (e.g., cry more) than girls and particularly by frustration "over dealing with a recalcitrant inanimate object" (Maccoby & Jacklin, 1974, p. 179). Although to my knowledge there are no comparable studies of sex differences in the emotional reaction to successful acts, the causal attribution literature indicates that males make self-enhancing attributions (e.g., to ability) for successful achievement to a greater extent than females (e.g., Nicholls, 1975). It may follow that males take more acute pleasure from their successes than females. Taken together, these sorts of results suggest an attributional explanation of why males may respond in a more intense fashion than females to both unfavorable and favorable life outcomes to which they have actively contributed.

Although inaction has received less attention than positive action or achievement, both intuition and research suggest that societal restrictions on action might be accompanied by personal guards on emotional reactivity to action-based success or failure (e.g., McClelland, Davis, Kalin, & Wanner, 1972). Despite its counterstereotypical thrust, this research provides a possible explanation of why females appear to respond less intensely than males to favorable or unfavorable life outcomes following action.

Emotional Reactions to Positive and Negative Outcomes

Once again, it has been observed that we tend to assign greater weight to negatives than to positives: The emotional response attributed to unhappy decisions is more intense than the emotional response attributed to otherwise equivalent happy decisions. The finding that in two of the three vignettes presented the actor effect was significantly stronger for the case of negative life outcomes than positive life outcomes has important consequences for the further development of regret theory. Insofar as regret theories rest on the assumption that both kinds of "regret" (as broadly defined to include both pleasure and displeasure [e.g., Bell, 1981]) operate according to parallel principles, these theories will fail to reflect actual psychological functioning. This finding of the dominance of emotional costs over emotional gains implies that people are likely to be conservative in their decisions—to attempt to minimize regret rather than to maximize joy (Kogan & Wallach, 1967). According to one explanation, this tendency to weigh emotional costs more heavily than emotional gains may in sad fact be adaptive: "Ultimate negatives such as death and lifelong suffering do not seem to be balanced by ultimate positives such as immortality and perpetual nirvana" (Kanouse & Hanson, 1971, p. 60).

The results of this study also provide further evidence in support of a principle recently postulated by Kahneman and Miller (1986): that more ideal conditions are generally more available as alternatives to reality than are less ideal conditions. Among the emotional implications of this principle are that because it is easier to imagine how a less-than-ideal reality might have been better than to imagine how a favorable reality might have been worse, regret for unfavorable realities might come more easily than joy over favorable realities.

Among the three vignettes presented, the vacation vignette alone produced results in which the actor effect was not stronger for negative than for positive outcomes. Instead, for the vacation vignette, the actor effect was just as strong in response to the positive as to the negative outcome. What is it about the vacation vignette that might account for this discrepancy?

It appears that the observed interaction effect may be due to a small but crucial feature distinguishing the vacation vignette from the other two vignettes. In the course vignette, Paul and George do not know what grade they might have received in the other section; similarly, in the job vignette, John and Dave do not know whether they would have kept their job or been laid off had they made the other decision. In contrast, in the vacation vignette, the alternative outcome is spelled out explicitly—that is, either it rained or was dry at the vacation spot not chosen. Recently reported results of a study of the affective consequences of knowledge of what might have been may help to explain the present results.

Johnson (1986, p. 52) tested whether individuals compare their actual outcomes with known but unrealized possibilities, "creating comparison standards that overshadow existing circumstances in shaping affective states." The results of Johnson's (1986) study suggested that the emotions attributed to near-losers (who, due to a contrast effect are seen as "winners") may be more favorable than those attributed to near-winners (who, due to the same contrast effect are seen as "losers"). Although the present results show a relationship of equality rather than of superiority between elation for nearly losing ("winning") and regret for nearly winning ("losing"), they confirm Johnson's suggestion of the emotional impact of being a near-loser and extend this insight to the decision context of action versus inaction. In this study, it appears that this phenomenon was approximated in response to the vacation vignette. In the positive outcome version of the vacation scenario, the usual joy at having made a good decision seems to have been augmented by explicit knowledge of the alternative—that is, the pleasure of having chosen to vacation in Key West during a spell of good weather was magnified by knowledge that it rained the entire time in Sarasota, the place not chosen.

In addition, the observed interaction extends Kahneman and Miller's (1986) postulate that it is harder to construct how a favorable reality might have been worse than to construct how an unfavorable reality might have been better. This seems to have been exactly what was occurring in the course and job vignettes, in which the alternative was unknown and thus had to be constructed. In contrast, in the vacation vignette, in which the alternative was known and thus did not

need to be constructed, the differential emotional reaction disappeared. Thus it appears that knowing what might have been is more moving than imagining what might have been.

In future research it will be desirable to distinguish not only acts and nonacts but also the critical features of the decision situation, such as knowledge of the alternative outcome, as well as the relative salience, informativeness, ease of stimulation, and causal connection of the acts and nonacts.

GENERAL SUMMARY

In conclusion, the previously observed (Kahneman & Tversky, 1982a) tendency to imagine greater regret over unfavorable outcomes following action than inaction was replicated and found to have a parallel—a tendency, albeit weaker, to experience greater joy over favorable outcomes following action than inaction. In addition, these results suggest that the positive emotional consequences of explicitly knowing a missed negative outcome may be as strong as the negative reaction to a negative outcome in the absence of explicit knowledge of the alternative. Finally, for the first time there is a suggestion that males and females may differ in their emotional reactions to action versus inaction, with males showing greater emotional reactivity to outcomes attained through action than females.

Stated more broadly, it appears that, psychologically, action is not equivalent to inaction, and the human reaction to happy life outcomes is not neatly symmetrical to the reaction to unhappy life outcomes.

NOTES

¹I am indebted to an anonymous reviewer for this suggestion.

²A fourth vignette was originally presented, but because it proved to differ in important ways from the above vignettes, these results are not reported here.

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