Reactance, Compliance, and Anticipated Regret

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The current work explored the relations among reactance, regret, and behavioral choice. A possible mechanism for reactance in opposition to persuasion attempts involves people anticipating greater regret for negative outcomes after complying with an agent of persuasion than for negative outcomes after reacting against an agent of persuasion. Some participants were asked to anticipate regret prior to making a behavioral choice in the face of an influence attempt. These participants anticipated greater regret for negative outcomes that would be experienced after reacting against rather than complying with the influence attempt. Accordingly, these participants subsequently exhibited behavioral compliance. On the other hand, participants who made choices without explicitly being asked to anticipate possible future regret showed far greater reactance. Interestingly, in all cases compliance led to significantly greater regret than did reactance once a negative outcome actually occurred. These data indicate that people do not spontaneously anticipate the regret that they may experience in an influence situation. Furthermore, when asked to anticipate such regret, they misanticipate their future feelings. The implications of complying with and reacting against the demands of others are discussed. © 2001 Elsevier Science

We found an old shepherd among the mountain's ridges who tried at great length to discourage us from the ascent.... But his counsels merely increased our eagerness to go on.

-Francesco Petrarch, The Ascent of Mount Ventoux

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Why is the reaction of Petrarch in the opening quote so common a response to an influence attempt? That is, why are alternatives seen as more desirable after they are restricted or threatened with elimination? Brehm (1966) attempted to answer this question with his theory of psychological reactance. Reactance theory holds that there exists a set of free behaviors from which an individual can potentially choose. When any of these free behaviors is eliminated or threatened with elimination, the individual experiences psychological reactance, a motivational state directed toward the reestablishment of the free behavior. Imagine a situation in which an individual can select between Alternative A and Alternative B and that the person is told to pick Alternative B (threatening the freedom to choose Alternative A). In this situation, the individual becomes more likely



to choose Alternative A in order to restore the freedom to have it, and Alternative A becomes more desirable (Brehm & Sensenig, 1966).

The goal of the current work is to test an explanation for reactance effects in terms of a different psychological process—anticipated counterfactual regret. It is our contention that reactance findings might be reconceptualized in terms of anticipated regret, as opposed to the "reinstatement of freedom" explanation. That is, the choice to go against the dictates of another may be due, in part, to the amount of future possible regret that is anticipated for negative consequences after choosing either the forbidden or the promoted alternative. In that individuals reliably go against the wishes of the other, it is possible that they anticipate greater regret if negative outcomes follow compliance with the dictates of another than if the same negative outcomes follow defiance against the dictates. To avoid greater future regret, individuals exhibit reactive behavior rather than compliance.

Consider again the example in which an individual is presented with Alternatives A and B and is told to pick Alternative B. According to reactance theory, Alternative A is selected to reestablish the freedom to choose it. According to an anticipated regret interpretation, Alternative A becomes more desirable because one considers as more aversive the consequences of complying with another's demand and experiencing an undesirable outcome (i.e., Alternative B is chosen and Alternative A turns out to be better than Alternative B) than of not complying with another's demand and experiencing an undesirable outcome (i.e., Alternative A is chosen and Alternative B turns out to be better). In other words, in prospect, the prefactual thought "If only I hadn't listened to him" yields more anticipated regret than the alternative prefactual thought "If only I had listened to him." Thus, one minimizes anticipated regret by reacting against the demand.

At its essence, this alternative approach argues that, prior to behavioral decisions, there is a consideration of potential future aversive consequences for various alternatives that drives the experience of anticipated regret, which in turn influences subsequent choices. As we know, actual regret is experienced in any situation where a decision turns out badly and an alternative course of action would have led to a better outcome (Kahneman & Miller, 1986; Kahneman & Tversky, 1982; Roese, 1997). The bad outcome leads to thoughts of an alternative world where a different choice would have led to a better outcome. Such thoughts create regret. However, according to Miller and Taylor (1995),

people also anticipate future negative outcomes and the regret that such outcomes would elicit. Individuals attempt to minimize future regret, and when being told what to do, they may perceive that future regret will be minimized by reacting against the demand.

The comparison between actual outcomes and "what might have been" counterfactual thinking (for a review, see Roese, 1997) has definite implications for decision making and subsequent affect (e.g., Medvec, Madey, & Gilovich, 1995; Medvec & Savitsky, 1997; cf. McMullen, 1997). Although much work has explored the elicitation and effects of counterfactual thinking after a decision has been made, little research has explored the link between prefactual thinking and anticipated regret (for exceptions, see Gleicher et al., 1995; McConnell et al., 2000) and the issue of how considering possible future consequences affects judgment and decision making. Regret theory (Bell, 1981; Loomes & Sugden, 1982) explicitly addresses the role of this anticipatory function in decision making. That is, the decision process not only involves determining the absolute level of pain or pleasure associated with an alternative but also depends on comparisons between the relative desirability of the outcomes of the chosen and the nonchosen options. Anticipation of different levels of regret following the various outcomes thus becomes an important part of the choice process.

Although many researchers have studied the role of anticipated regret in risk aversion (e.g., Kardes, 1994), recent experimental research has focused more directly on regret aversion (Zeelenberg & Beattie, 1997; Zeelenberg, Beattie, van der Pligt, & de Vries, 1996). In one series of experiments, Zeelenberg et al. (1996) showed that people make regret-minimizing as opposed to risk-minimizing choices in choosing between gambles. Research by others (Larrick & Boles, 1995; Ritov, 1996; Ritov & Baron, 1995; Simonson, 1992) also indicates that the anticipation of regret can explain decisions in situations where the future is uncertain. We now consider the concept of regret aversion as a possible explanation for an important social psychological phenomenon—reactance. We propose the possibility that those who are told by others to make particular decisions might consider how they will feel if they follow others' edicts (or fail to follow them) and then find out that they made bad decisions.

What might we expect regarding the relative amount of anticipated regret for compliance with versus reactance against the persuasive attempts of another person? From our perspective, there are two competing possibilities, and one could make a reasonable case for each. One could argue that thinking about blindly following another's advice, especially if that other has no privileged knowledge, and showing conformity rather than independence could lead to a large amount of anticipated regret. *If* people anticipate regret in situations involving reactance, and *if* they anticipate

¹ It might seem strange to refer to an anticipation of the future as counterfactual given that no event has yet occurred. However, when one anticipates the future, by necessity one must imagine or simulate an event. As one considers possible regret for this simulated reality, counterfactuals are generated. Thus, the term *counterfactual* seems perfectly appropriate. We prefer the term *prefactual* and use it for considerations of anticipated regret.

58 CRAWFORD ET AL.

greater regret following a bad outcome for compliance than for defiance, then this can account for many reactance findings. On the other hand, one might predict greater anticipated regret for defiance than for compliance. Going along with the advice of another may seem like more of an inaction than actively defying another person. Because actions are known to bring greater counterfactual regret than are inactions (Kahneman & Miller, 1986), actively disregarding the good advice of another may seem particularly regrettable prefactually. In addition, defiance may be more likely to be seen as an action that involves the exercise of personal control, and regret is more likely when personal control is exercised (Markman, Gavanski, Sherman, & Mc-Mullen, 1995). In any case, it is an open question whether people anticipate greater regret for bad outcomes following compliance or for bad outcomes following defiance and whether such anticipated regret has effects on subsequent decisions.

One purpose of the present experiment is to investigate whether people do, in fact, anticipate greater regret for compliance than for defiance. If so, this could serve as an explanation for reactance effects in that defiance might be adopted so as to minimize future regret. Thus, we asked participants to anticipate future regret for negative outcomes following compliance or defiance, and we investigated whether this anticipated regret predicted their subsequent choices. In addition, by having some participants simply make their choices without first explicitly considering future regret, we could determine whether participants spontaneously anticipated regret prior to engaging in behavior. Finally, we examined participants' actual regret after negative outcomes had occurred to determine whether they were accurate in anticipating future regret.

In short, the goals of the experiment were (a) to determine whether anticipated future regret is greater for bad outcomes following compliance or following defiance, (b) to investigate whether anticipations of future regret affect subsequent behavioral choices, (c) to determine whether the anticipation of regret is spontaneous, and (d) to examine the relation between the prediction of regret and the actual amount of regret experienced following a negative outcome.

Participants were presented with two options of equal attractiveness (a choice of which football team would win a game) and were pushed toward one of the options, ostensibly by another student. Half the participants completed measures of anticipated regret prior to choosing an option. In all cases, the chosen option lost, and participants reported their retrospective regret following the outcome.

If regret is anticipated spontaneously, then there should be no differences in the choices of participants who completed the anticipated regret measures and those who did not. That is, if the patterns of selection for these two groups were identical, then we can assume that both groups considered the same information prior to making the decision or that the consideration of this information did not change their behavior. On the other hand, if the pattern of results is different, then it is reasonable to assume that the participants who did not complete the anticipated regret measures did not spontaneously consider the possibility of future regret before acting.

METHOD

Participants and Design

At Indiana University, 165 students participated toward partial completion of a course requirement. They also received a small gift (a candy bar) on completion of the experiment. The design was a 2 (anticipated regret: yes vs no) \times 2 (direction of push: Team X vs Team Y) betweensubjects factorial.²

Procedure

Participants came to the laboratory in groups of 4 to 13 for a study titled "You Betcha." They were told that the experiment examined the information that people use when making betting decisions. Each participant was led to believe that he or she would select one team from a football game and that the participant would win \$5 if his or her chosen team won. Next, the experimenter described the procedure necessary for the cover story.

Cover story. Instructions for the experiment were presented by computer. Participants were told that half of the computers could send messages to other computers (called "senders") and that half could only receive messages (called "receivers"). It was explained that this feature would not be involved in the present study but that the experimenter wanted to test out the capability of the computers to make sure that they were functioning properly. Thus, the senders at the beginning of the session would send some simple messages to receivers. In reality, all participants were receivers. After a few moments, the participants received the same experimenter-generated message from (ostensibly) another student. The message was, "Hi, this is Chris. I am supposed to send you this message."

Next, information about the two football teams was presented on the screen. Team information was constructed to make each team equally attractive (team summaries appear in the Appendix). In a pretest, 35 graduate students read the summaries and indicated which of the two teams they would choose. Team X was chosen 46% of the time, indicating that the teams were seen as equivalent, z=0.33, n.s. (binomial test).

² Cell sizes varied. There were 82 participants in the anticipated regret no condition (41 in each of the push conditions) and 83 participants in the anticipated regret yes condition (40 in the Push X condition and 43 in the Push Y condition).

The influence attempt. After the team information was presented, the computers instructed the participants to consider their decisions carefully. After 30 s, another (unexpected) message from Chris appeared on each computer screen stating, "This is Chris again. I don't think that I am supposed to write again, but you definitely have to pick Team X [Y]."

Anticipated regret. To assess anticipated regret, half the participants (those in the anticipated regret condition) responded to two anticipated regret questions following the influence attempt but prior to actually making their choice. They rated the amount of regret they would feel if they chose Team X and lost and the amount of regret they would feel if they chose Team Y and lost. Both were made on a 9-point scale ranging from 1 (no regret at all) to 9 (extreme regret). The remaining participants (no anticipated regret) were not asked to think about future regret.

Next, each participant selected one of the teams. Afterward, the computer presented the outcome of the game. In all cases, the chosen team lost. Following the presentation of the outcome, all participants reported their levels of retrospective regret using a 9-point scale ranging from 1 (no regret at all) to 9 (extreme regret). After completion of the retrospective regret measure, participants were debriefed and given their candy bars. No participant expressed suspicion about the communications from Chris or about the purported purpose of the study.

RESULTS

Anticipated Regret

The data from the anticipated regret measures, collected only from those participants in the anticipated regret condition, were submitted to a 2 (direction of influence: Team X vs Team Y) \times 2 (anticipated regret measure: Team X vs Team Y) mixed-design ANOVA with the second factor repeated. This analysis revealed a theoretically uninteresting main effect for anticipated regret measure indicating greater anticipated regret following a loss by Team Y (M = 4.77) than by Team X (M = 4.47), F(1, 81) = 4.84, p < .05. More important, there was a regret measure by direction of influence interaction, F(1, 81) = 26.57, p < .001, indicating that participants anticipated greater regret follow-

TABLE 1
Anticipated Regret for Choosing a Team and Losing as a Function of Team Pushed

	Team pushed by other person	
	Team X	Team Y
Team X	4.10	4.81
Team Y	5.20	4.31

TABLE 2
Choice of Team as a Function of Anticipated Regret Condition and Team Pushed (Percentages)

	Team chosen by participant	
	Team X	Team Y
Anticipated regret condition		
Push Team X	73	27
Push Team Y	26	74
No anticipated regret condition		
Push Team X	15	85
Push Team Y	68	32

ing reactance than following compliance. As Table 1 shows, when Team X was pushed, participants anticipated greater regret if they reacted and chose Team Y and lost than if they complied and chose Team X and lost, F(1, 39) = 39.65, p < .001. The same pattern of results emerged when the influence attempt was toward Team Y. Participants again expected greater regret following a loss resulting from defiance than from compliance, F(1, 42) = 4.75, p < .05. Thus, when asked to think about future regret, participants expected to feel greater regret after a loss following defiance than after a loss following compliance.

Team Choice

Given that participants who were asked anticipated greater regret following a loss after defiance than after compliance, we expected that their actual choices would be influenced by this expectation of greater regret. That is, if the anticipation of regret affects subsequent choices, then participants should be likely to comply with an influence attempt after thinking about the possibility of future regret. However, what about participants who were not asked to anticipate regret? If they spontaneously think about future regret, then they too should conclude that there will be greater regret following defiance, and they should also be likely to comply.

Participants' choices were analyzed using a 2 (anticipated regret: yes vs no) \times 2 (direction of influence: Team X vs Team Y) \times 2 (choice: Team X or Team Y) log-linear model. This analysis revealed only one significant effect parameter, the three-way interaction, z=6.13, p<.001. As Table 2 shows, chi-square partitioning of this three-way interaction found significant two-way interactions between direction of influence and choice for both the anticipated regret condition, $\chi^2(1, N=43)=17.34$, p<.001, and the no anticipated regret condition, $\chi^2(1, N=41)=23.23$, p<.001. Binomial tests revealed that those in the anticipated regret condition showed strong evidence of compliance, choosing Team X more often when Team X was pushed, z=2.69, p<.01, and choosing Team Y

60 CRAWFORD ET AL.

more often when Team Y was pushed, z=3.05, p<.01. In all, 74% of participants who were asked to anticipate future regret complied with the influence attempt. On the other hand, participants who did not complete the anticipated regret measures before choosing showed strong evidence of defiance, choosing Team Y more often when Team X was pushed, z=4.37, p<.001, and choosing Team X more often when Team Y was pushed, z=2.19, p<.02. In all, only 23% of participants who were not asked to anticipate future regret complied with the influence attempt.

Thus, participants who completed the anticipated regret measures prior to making their choices showed a different pattern of results (i.e., compliance) than did participants who did not complete these measures (i.e., reactance). It appears that participants do not spontaneously anticipate regret. Their decisions were not based on thoughts of future regret unless they were explicitly told to entertain such thoughts.

Retrospective Regret

To examine whether participants correctly anticipated the amount of regret that they expected to feel in response to a loss, the retrospective regret data were analyzed using a 2 (participant behavior: compliance vs reactance) \times 2 (anticipated regret: yes vs no) \times 2 (direction of influence: Team X vs Team Y) between-subjects design. This analysis revealed a significant main effect of participant behavior on the experience of regret, indicating that participants felt significantly more regret about losing following compliance (M = 5.23) than following reactance (M = 4.26), F(1,165) = 5.98, p < .05. No other effects were significant. Importantly, the interaction between participant behavior and anticipated regret was not significant, F < 1.0. Participants felt greater regret for compliance than for reactance whether they had anticipated regret (5.21 vs 4.05) or not $(5.26 \text{ vs } 4.35).^3$

DISCUSSION

The data reveal several interesting findings. First, it is clear that anticipated regret cannot account for reactance effects. Rather than anticipating greater regret for a loss following compliance, participants anticipated greater regret for a loss following reactance (and thus they complied). In fact, more than 70% of those participants who anticipated regret complied with the influence attempt.

The next question involved the spontaneity of regret anticipation. That is, do people spontaneously consider future regret in response to an influence attempt, or do they consider future regret only when instructed to do so? The data indicate that our participants did not spontaneously anticipate the regret that might be experienced in response to an influence attempt. Evidence for this comes from the fact that, by inducing participants to consider the possibility of future regret, their selection of alternatives was affected. Those who considered the possibility of regret showed a pattern of selection different from, and in fact opposite to, the pattern shown by participants not instructed to anticipate regret. One would expect similar patterns of alternative selection if both groups were, in fact, anticipating regret.

Finally, among participants who anticipated regret, compliant behavior led them to feel greater retrospective regret than did defiant behavior. In fact, all participants reported greater retrospective regret after compliance than after reactance. When forced to consider the possibility of future regret, participants misanticipated the regret that they would actually feel. That is, participants expected to feel more regret following reactance than following compliance when, in fact, they felt more actual regret after complying with the influence attempt than after reacting against it. This led them to adopt a behavior—compliance—that would lead to greater regret.

One of the goals of the study was to explore the possibility of a relation between cognitive reactance and anticipated regret in response to an influence attempt. Previous research has demonstrated the occurrence of reactance in a number of different situations including those that could be classified as attempts to influence one's decision (Brehm & Sensenig, 1966; Heller, Pallak, & Picek, 1973; Snyder & Wicklund, 1976). The generally accepted explanation for reactance is that it is a motivated response that attempts to reestablish a freedom that has been threatened or eliminated. We tried to reconceptualize findings from the reactance literature in terms of anticipated regret.

How did our alternative possibility fare? In one sense, the answer is "not well." Decision makers who, prior to their choice, anticipated the regret that they would experience for negative outcomes following compliance or reactance anticipated greater regret if they reacted against the influence attempt and lost. And, in fact, these participants then demonstrated more compliance with the persuasion attempt, at least in part as a way of minimizing future regret.

If this were all that there were to the story, then it would not be a very interesting one. However, several other findings are extremely enlightening and help us to understand important aspects of compliance, reactance, and regret. First, our decision makers were *wrong* in their predictions of regret. The measures of actual regret experienced by our (losing) choosers showed quite clearly that those who had complied and lost experienced far greater regret than did those who had reacted against the persuasion attempt and then lost. This was true regardless of the original anticipation of regret. That is, regardless of whether participants did

³ An additional analysis separated participants who had anticipated regret into those who anticipated greater regret for compliance, those who anticipated greater regret for reactance, and those who anticipated equal regret for compliance and reactance. In all cases, compliant behavior led to greater regret than did defiant behavior.

or did not anticipate regret, those who complied subsequently felt far greater regret than did those who showed reactance. The finding that people mispredict the behaviors or feelings of others and of themselves is not new (Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 1998; Greenwald, Carnot, Beach, & Young, 1987; Sherman, 1980). What is new is that such misprediction has not been demonstrated previously with regard to anticipated regret. More important, as in the earlier misprediction studies, it seems clear that our participants' choices were based, to some extent, on their mispredictions. They predicted greater regret for losing after reactance, and thus they complied. Unfortunately, this led them to adopt a behavior that was associated with greater regret.

The finding that thinking about a decision before it is made can actually alter that decision has much in common with the work of Wilson and his colleagues (e.g., Wilson, Dunn, Kraft, & Lisle, 1989). For example, Wilson et al. (1993) reported that asking participants to introspect about why they would choose one of two posters affected which type of poster they chose. In addition, thinking about the choice before making it led these participants to be less satisfied with their decisions. In Wilson et al.'s work, participants introspected about their attitudes before choosing a poster. In our case, participants tried to anticipate future regret before choosing a football team. In both cases, participants were not able to make their judgments very well, and this led to choices that would make subsequent regret more likely.

Why were our participants not able to accurately anticipate their regret? One possibility stems from the misprediction work by Sherman (1980). There, it was suggested that people tend to overpredict that they will engage in socially desirable or normative behaviors, and it is likely that engaging in desirable behaviors will be seen as less regrettable. Perhaps it is seen as more normative and desirable to comply with another's request rather than to be defiant. Alternatively, Wilson et al. (1989) suggested that introspection leads to misperception and misprediction because introspection focuses people on the most easily verbalizable attributes of a situation. Perhaps the negative aspects associated with defiance that goes awry are easier to verbalize and come to mind more quickly than do the negative aspects associated with compliance that goes awry. Thus, people (wrongly) anticipate greater regret for defiance (and therefore comply).

One might also ask why people feel greater retrospective regret for compliance than for reactance. Why should going along with the dictates of another feel worse than defying the dictates of another when the consequences are equally bad? It is *not* because many participants who (mis)anticipated regret switched from their natural dominant tendency to be defiant and later regretted switching. We know this because, even among participants who did not anticipate

regret, those who complied experienced greater regret than did those who were defiant.

One possibility is that the choice between compliance and reactance boils down to a decision between being independent, at the risk of being more responsible for one's behavior, and being compliant, in which case one gives up independence but has someone else to blame for a bad outcome (i.e., the one who made the bad suggestion). In most decision-making situations, there is a sizable amount of uncertainty. It may well be that forcing people to anticipate regret heightens this uncertainty, which makes having an excuse for a poor outcome especially attractive (Berglas & Jones, 1978). As a result, compliance is more likely, so that the inducing agent can be blamed. However, once one experiences a bad outcome, the uncertainty is gone. Although one has another person to blame for the debacle, things still did not turn out well, and it is clear that this outcome would have been avoided if only one had taken responsibility for one's action. Thus, after a poor decision, one is left with a bad outcome and an awareness that it would have been avoided if only one had not given away his or her autonomy. One may also feel vulnerable to being led down the wrong path by others' persuasive attempts in the future.

This need for a personal sense of control has been demonstrated to be important in people's affect and future behavior. For example, rape victims (Janoff-Bulman, 1979) and surviving family members (Davis, Lehman, Wortman, Silver, & Thompson, 1995) often blame themselves for their misfortunes in order to feel that the world is predictable and controllable. Although seemingly irrational and painful, following negative events, people often imagine how things could have turned out better by changing their own behavior to increase their sense of control. Likewise, compliant participants in the current study may have, following their undesirable outcomes, focused more strongly on their unrealized ability to make their own decisions in the face of others' demands.

Interestingly, literature on misprediction has shown that errors of prediction are self-erasing (Greenwald et al., 1987; Sherman, 1980). Thus, when one mispredicts what one would do in a possible future situation (a misprediction when compared to what one would really do if not first asked to predict), one actually then behaves in line with the prediction when the situation arises, and there is, in a sense, no error of prediction. It is only an error in the sense that it is the prediction that alters the behavior and renders it different from what it would have been in the absence of a prediction. Participants in the present experiment mispredicted their future regret, and this affected what they did. However, the misprediction did not affect the regret that they felt. Participants who predicted greater regret for reactance and who then complied did not experience a low level of regret once they lost. It is interesting to speculate that, although errors of behavior are self-erasing and will bring

62 CRAWFORD ET AL.

about behavior in line with predictions, errors in predicting future affect are not self-erasing. This is consistent with Gilbert et al. (1998), who found that people did not dwell on despair despite their expectations of doing so. Perhaps this difference between the self-erasing nature of behavior versus affect reflects the simple fact that behaviors are quite easily controllable, whereas feelings are not. Even when we anticipate certain feelings in the future and engage in behaviors that are designed to bring about these feelings, we cannot cause the feelings to happen.

Another interesting and important finding is that participants who were not asked to anticipate future regret made very different decisions from those who were asked to anticipate future regret. Participants who were not asked to anticipate regret showed reactance. By so doing, they were able to avoid much post-choice regret in comparison to those who complied. This finding indicates that people do not spontaneously anticipate regret and use this anticipation to guide their decisions, at least not in the kind of situation that was used in our experiment. Past research in the area of anticipated regret (Ritov, 1996; Simonson, 1992; Zeelenberg et al., 1996) asked participants directly to think about possible future regret. It will be important to identify those situations that lead to a spontaneous consideration of future regret and those that do not. For example, Gleicher et al. (1995) found that people who score high on the Consideration of Future Consequences Scale are more likely to think about the future implications of what they do. It is clear that the participants in the current study did not spontaneously anticipate regret and that the participants who did think about future regret engaged in behaviors that would bring greater regret.

Thus, the participants who did not anticipate future regret showed a great deal of defiance in response to the persuasion attempt. This brings us back, then, to our original question: What is the basis for reactant behavior? Having shown that anticipated regret is not, in fact, a basis for reactance, we must conclude, based on existing data, that Brehm's (1966) original formulation of reactance in terms of a motivation to reestablish threatened freedom is correct. However, based on our data, reactance will emerge only if one does not try to anticipate the possible affective consequences of complying with or reacting against an influence attempt. In that case, one will misanticipate future affect and suffer the consequences. Ironically, considering how to bring about the most positive future in compliance situations may set in motion behaviors that ensure an unhappy future. It is not always true, then, that thinking about the future is helpful for decision making.

APPENDIX

For years, these two teams have been the best teams in their conference as well as nationally in Division I-AA.

There is a natural and intense rivalry between these two teams. Local sportswriters agree that the game will be highly emotional and that the outcome of the game is difficult to call. One reporter wrote, "In major rivalries such as these, emotions run high and you're just as likely to see a blowout for one team as you are to see a close game." The series record is Team X with 28 wins and Team Y with 15 wins. Team Y has won two of the last three meetings between these teams.

	Team X	Team Y
Record	8-1	7-2
Passing offense	QB ranked 4th nationally (51%, 889 yards, 7 TDs)	QB ranked 2nd nationally (63%, 1,206 yards, 13 TDs)
	No receiver in top 10 Overall rank: 8th	WR ranked 5th nationally Overall Rank: 6th
Rushing offense	RB ranked 1st nationally (1,723 yards, 6.1 yards per carry)	RB ranked 3rd nationally (720 yards, 4.4 yards per carry)
	Team: 267 yds/game	Team: 188 yds/game
	Overall rank: 1st	Overall rank: 4th
Passing defense	Ranked 4th nationally (allowed only 173 yards per game passing)	Ranked 3rd nationally (allowed only 138 yards per game passing)
Rushing defense	Ranked 4th nationally (allowed only 145 yards per game rushing)	Ranked 3rd nationally (allowed only 118 yards per game rushing)
Injuries	Starting offensive guard, linebacker, and safety will not play. Kicker suspended.	Starting center and inside linebacker will not play.

Note. QB, quarterback; TD, touchdown; WR, wide receiver; RB, running back

REFERENCES

Bell, D. E. (1981). Explaining utility theory paradoxes by decision regret.
In J. Morse (Ed.), Proceedings of the Fourth International Conference on Multiple Criteria Decision Making (pp. 28–39). New York: Springer.

Berglas, S., & Jones, E. E. (1978). Drug choice as a self-handicapping strategy in response to noncontingent success. *Journal of Personality* and Social Psychology, 36, 405–417.

Brehm, J. W. (1966). A theory of psychological reactance. New York: Academic Press.

Brehm, J. W., & Sensenig, J. (1966). Social influence as a function of attempted and implied usurpation of choice. *Journal of Personality and Social Psychology*, 4, 703–707.

Davis, C. G., Lehman, D. R., Wortman, C. B., Silver, R. C., & Thompson, S. C. (1995). The undoing of traumatic life events. *Personality and Social Psychology Bulletin*, 21, 109–124.

Gilbert, D. T., Pinel, E. C., Wilson, T. D., Blumberg, S. J., & Wheatley, T. P. (1998). Immune neglect: A source of durability bias in affective forecasting. *Journal of Personality and Social Psychology*, 75, 617–638.

Gleicher, F., Boninger, D. S., Strathman, A., Armor, D., Hetts, J., & Ahn, M. (1995). With an eye toward the future: The impact of counterfactual thinking on affect, attitudes, and behavior. In N. J. Roese & J. M. Olson

- (Eds.), What might have been: The social psychology of counterfactual thinking (pp. 283–304). Hillsdale, NJ: Erlbaum.
- Greenwald, A. G., Carnot, C. G., Beach, R., & Young, B. (1987). Increasing voting behavior by asking people if they expect to vote. *Journal of Applied Psychology*, 72, 315–318.
- Heller, J. F., Pallak, M. S., & Picek, J. M. (1973). The interactive effects of intent and threat on boomerang attitude change. *Journal of Person*ality and Social Psychology, 26, 273–279.
- Janoff-Bulman, R. (1979). Characterological versus behavioral self-blame: Inquiries into depression and rape. *Journal of Personality and Social Psychology*, 37, 1798–1809.
- Kahneman, D., & Miller, D. T. (1986). Norm theory: Comparing reality to its alternatives. *Psychological Review*, 93, 136–153.
- Kahneman, D., & Tversky, A. (1982). The simulation heuristic. In D. Kahneman, P. Slovic, & A. Tversky (Eds.), Judgment under uncertainty: Heuristics and biases (pp.201–208). New York: Cambridge University Press.
- Kardes, F. R. (1994). Consumer judgment and decision processes. In R. S. Wyer & T. K. Srull (Eds.), *Handbook of social cognition*, Vol. 2: *Applications* (2nd ed., pp. 399–466). Hillsdale, NJ: Erlbaum.
- Larrick, R. P., & Boles, T. L. (1995). Avoiding regret in decisions with feedback: A negotiation example. *Organizational Behavior and Human Decision Processes*, 63, 87–97.
- Loomes, G., & Sugden, R. (1982). Regret theory: An alternative theory of rational choice under uncertainty. *Economic Journal*, **92**, 805–824.
- Markman, K. D., Gavanski, I., Sherman, S. J., & McMullen, M. N. (1995).
 The impact of perceived control on the imagination of better and worse possible worlds. *Personality and Social Psychology Bulletin*, 21, 588–595
- McConnell, A. R., Niedermeier, K. E., Leibold, J. M., El-Alayli, A. G., Chin, P. P., & Kuiper, N. M. (2000). "What if I find it cheaper somewhere else?" Role of prefactual thinking and anticipated regret in consumer behavior. *Psychology and Marketing*, 17, 281–298.
- McMullen, M. N. (1997). Affective contrast and assimilation in counterfactual thinking. *Journal of Experimental Social Psychology*, 33, 77– 100.
- Medvec, V. H., Madey, S. F., & Gilovich, T. (1995). When less is more: Counterfactual thinking and satisfaction among Olympic medalists. *Journal of Personality and Social Psychology*, 69, 603–610.
- Medvec, V. H., & Savitsky, K. (1997). When doing better means feeling

- worse: The effects of categorical cutoff points on counterfactual thinking and satisfaction. *Journal of Personality and Social Psychology*, **72**, 1284–1296.
- Miller, D. T., & Taylor, B. R. (1995). Counterfactual thought, regret, and superstition: How to avoid kicking yourself. In N. J. Roese & J. M. Olson (Eds.), What might have been: The social psychology of counterfactual thinking (pp. 305–331). Hillsdale, NJ: Erlbaum.
- Petrarch, F. (1898). The ascent of Mount Ventoux. In J. H. Robinson (Ed. & Trans.), Francesco Petrarch: The first modern scholar and man of letters. New York: Putnam. (Original work published 1342)
- Ritov, I. (1996). Probability of regret: Anticipation of uncertainty resolution in choice. *Organizational Behavior and Human Decision Processes*, 66, 228–236.
- Ritov, I., & Baron, J. (1995). Outcome knowledge, regret, and omission bias. Organizational Behavior and Human Decision Processes, 64, 119-127.
- Roese, N. J. (1997). Counterfactual thinking. Psychological Bulletin, 121, 133–148.
- Sherman, S. J. (1980). On the self-erasing nature of errors of prediction. Journal of Personality and Social Psychology, 39, 211–221.
- Simonson, I. (1992). The influence of anticipating regret and responsibility on purchase decisions. *Journal of Consumer Research*, 19, 105–117.
- Snyder, M. L., & Wicklund, R. A. (1976). Prior exercise of freedom and reactance. *Journal of Experimental Social Psychology*, 12, 120–130.
- Wilson, T. D., Dunn, D. S., Kraft, D., & Lisle, D. J. (1989). Introspection, attitude change, and attitude–behavior consistency: The disruptive effects of explaining why we feel the way we do. In L. Berkowitz (Ed.), Advances in experimental social psychology (Vol. 22, pp. 287–343). San Diego: Academic Press.
- Wilson, T. D., Lisle, D. J., Schooler, J. W., Hodges, S. D., Klaaren, K. J., & LaFleur, S. J. (1993). Introspecting about reasons can reduce postchoice satisfaction. *Personality and Social Psychology Bulletin*, 19, 331–339.
- Zeelenberg, M., & Beattie, J. (1997). Consequences of regret aversion 2: Additional evidence for effects of feedback on decision making. Organizational Behavior and Human Decision Processes, 72, 63–78.
- Zeelenberg, M., Beattie, J., van der Pligt, J., & de Vries, N. K. (1996).
 Consequences of regret aversion: Effects of expected feedback on risky decision making. Organizational Behavior and Human Decision Processes, 65, 148–158.