

Action orientation, consistency and feelings of regret

Todd McElroy* and Keith Dowd
Department of Psychology
Appalachian State University

Abstract

Previous research has demonstrated that consistency between people's behavior and their dispositions has predictive validity for judgments of regret. Research has also shown that differences in the personality variable of action orientation can influence ability to regulate negative affect. The present set of studies was designed to investigate how both consistency factors and action-state personality orientation influence judgments of regret. In Study 1, we used a recalled life event to provide a situation in which the person had experienced either an action or inaction. Individuals with an action orientation experienced more regret for situations involving inaction (staying home) than situations involving action (going out). State-oriented individuals, however, maintained high levels of regret and did not differ in their regret ratings across either the action or inaction situations. In Study 2, participants made realistic choices involving either an action or inaction. Our findings revealed the same pattern of results: action-oriented individuals who chose an option that involved not acting (inaction) had more regret than individuals who chose an option that involved acting (action). State-oriented individuals experienced high levels of regret regardless of whether they chose to act or not to act.

Keywords: action, inaction, regret, action-state orientation, individual differences.

1 Introduction

Unquestionably, we all feel regret at times; whether we missed a great opportunity or failed to make the right decisions when pressed under the weight of burdening stress. This somber feeling of loss can accompany our actions (or lack thereof) and be a powerful force for both our emotional and behavioral responses. Efforts at understanding the experiences underlying these feelings of regret have led to different avenues of research. Much of the contemporary work charged with understanding regret has spotlighted attention on how imaginary outcomes or “counterfactuals” influence a person's feeling of regret (e.g., Bell, 1982; Loomes & Sugden, 1982; Kahneman & Miller, 1986). Although this certainly makes up a fascinating facet of the regret process, the “focused attention” of research has led most researchers to relinquish pursuit of other pre-decisional factors that come into play in the regret process.

Recently, however, a good deal of research has begun to examine this aspect of the processes involved in regret. Specifically, research has demonstrated that consistency factors between people and their behavior also play an important role in understanding the regret process (e.g., Connolly & Zeelenberg, 2002; Pieters & Zeelenberg, 2005; Seta, McElroy & Seta, 2001). One as-

pect of the consistency-regret relationship that remains largely uninvestigated is how individual difference factors influence reliance on consistency information. In this paper we focus on how the individual difference factor of action-state orientation affects responsiveness to decision factors (action vs. inaction) as well as the ability to regulate bad outcome information in a regretful situation.

1.1 Consistency view

Paramount explanations of human behavior suggest that motivation caused by the drive to maintain cognitive consistency will lead people to change their attitudes, beliefs, and behaviors in order to best achieve or maintain a state of internal consistency. One of the earliest views derived from this perspective was developed by Heider (1946) who proposed balance theory as a way of understanding human behavior. According to Heider, stability is the desired state that we hope to maintain. However, when elements are perceived as psychologically inconsistent, they are unstable. And this instability of psychological elements acts to motivate an individual to seek out a way to obtain or reestablish a state of stability.

One type of consistency comparison focuses on how alternatives are contrasted before a decision is reached. Work by Janis and Mann (1968; 1977) led to the development of conflict theory, which suggests that individual decision makers compare alternatives they are facing. According to this approach, decision makers will

*Special thanks to Hakan Ersever. Address: Department of Psychology, College of Arts and Sciences, P.O. Box 32109, 265 College St., Boone, NC 28608. Email: mcelroygt@appstate.edu.

be motivated by the tension of making a bad decision and consequently bolster their opinion of an option before the choice is made. This allows decision makers to escape from the tension of making a bad decision before becoming committed to an option. Work by Svenson (1996) also focused on predecisional comparison and described this processing as a series of back and forth comparisons between alternatives that is terminated when one alternative is perceived as superior. More recent work has advanced the understanding of predecisional consistency principles, demonstrating how they are an effective means for understanding decisions in a complex environment that often consists of ambiguous information (Holyoak & Simon, 1999; Simon & Holyoak, 2002).

Introduction of this consistency factor also led to the theoretical advancement that inconsistency can lead to a negative state of arousal, or cognitive dissonance (Festinger, 1957), which in turn motivates people to take the appropriate steps necessary to alleviate this dissonance. Further examination of the role that consistency factors can play has led to great strides in understanding human behavior (e.g., Aronson, 1969; Brehm & Cohen, 1962; Festinger, 1957; Markus & Zajonc, 1985).

Recently, some researchers have begun to investigate how consistency factors may influence feelings of regret. One approach deals with how regret can arise as a function of consistency/inconsistency between a person's orientation and action/inaction of an evaluative choice. In a series of studies, Seta, McElroy and Seta (2001) demonstrated that, when the decision maker adopts an orientation of acting (e.g., risk-taker) errors associated with actions are more consistent and lead to relatively less feelings of regret. On the other hand, errors associated with inactions are more inconsistent with the action orientation and lead to comparatively greater feelings of regret. Conversely, when a decision maker assumes an inactive orientation (e.g., risk-avoider) errors involving inactions are consistent and lead to relatively less regret as compared to errors involving actions.

Work by Camacho, Higgins & Luger (2003) investigated a similar consistency dependent framework. Camacho et al., focused their investigation on how value from fit with self regulatory focus and the task at hand influences feelings of morality. Across four studies, they observed how omission and commission corresponded to an individual's orientation towards either promotion or prevention. They found that when there was a "consistency" or a regulatory fit (commission corresponded to promotion focus and omission corresponded to prevention focus) guilt for past transgressions was relatively less, however, there was relatively greater guilt for past transgressions when a violation of fit or "inconsistency" between commission/omission and promotion/prevention occurred.

Recently, Connolly and Zeelenberg (2002) have proposed Decision Justification Theory (DJT) as a means for better understanding the regret process. According to DJT, feelings of regret stem from a combination of outcome evaluation as well as the feeling of having made a poor choice. Inherent within this view is the comparison process that occurs between the outcome and some standard. According to this view, outcomes that are unjustified or inconsistent with a standard will generate more regret without respect to whether the outcome itself was good or bad. Further extending this view, Pieters and Zeelenberg (2005) demonstrated that inconsistency between the outcome and some standard (intention-behavior inconsistency) is a determining factor for regret and that it seems to be specific to regret rather than other similar emotions. Further, they show that regret emanating from this inconsistency can be reduced if sufficient justification occurs.

Although this research strongly supports the view that consistency plays an important role in determining an individual's level of regret over a decision, an aspect that remains largely uninvestigated is how individual differences may influence feelings of regret via perceived inconsistency. Specifically, are there individual differences in the way that individuals regulate their regret responses in relation to consistency information? Further, could it be that individual personality characteristics can predispose decision-makers to experience more or less regret as function of the consistency between their personality and whether a bad outcome involved an action or inaction? One personality trait that seems particularly adept for providing some insight into these questions is the predisposition towards either an action or state orientation.

1.2 PSI theory

According to personality systems interactions theory (PSI), individuals are prone toward either an action or state orientation and this orientation is a stable personality characteristic for all persons (Kuhl, 2000) and appears to be reflected at very basic levels of processing (Koole & Coenen, 2007). According to work by Kuhl and colleagues (e.g., Baumann & Kuhl, 2002; Kuhl, 2000; Kuhl & Kazen, 1994), an action orientation predisposes people toward taking action to solve problems, spend relatively more cognitive resources on a given task and they are relatively better at focusing their attention to achieve success with a desired goal. Thus, they are more likely to outperform state-oriented individuals on person and goal centered tasks. State-oriented individuals, on the other hand, tend to dwell upon negative aspects of an event and have difficulty controlling negative affect. This aspect of their orientation diminishes their cognitive resources and impedes their ability to complete tasks and make

choices. Consequently, state-oriented individuals are relatively less effective at dealing with situations that incur negativity. Action-oriented individuals, however, are better able to overcome negative experiences, thus allowing them to regulate negative affect more effectively.

For example, research by Heckhausen and Strang (1988) found that basketball players who maintained a state orientation had both an increase in physiological stress and a decrease in athletic performance when performing under pressure whereas action-oriented players experienced neither physiological stress nor performance decrements when playing under similar levels of stress. Research has also shown that, when experiencing failure, state-oriented individuals show decreased performance on some cognitive tasks (Kuhl, 1981) and report more unpleasant feelings (Brunstein & Olbrich, 1985) than action-oriented individuals who do not seem to experience these effects.

1.3 Overview

Prior research involving consistency and regret (e.g., Camacho et al., 2003; Connolly & Zeelenberg, 2002; Pieters & Zeelenberg, 2005; Seta et al., 2001) has found that, when actions/inactions are inconsistent with the decision maker's orientation (intention), relatively greater regret is felt than when they are consistent. Research in PSI theory has demonstrated that state-oriented individuals have difficulty regulating negative affect, are chronic worriers and are relatively unable to dispense with negative states. Action-oriented individuals, on the other hand, are better able to use self-regulation for affect regulation and are more likely to take actions to relieve a negative state. In our investigation we sought to examine how personality predispositions toward an action or state orientation would influence reported feelings of regret generated from a distressful event involving either an action or inaction.

1.4 Predictions

Hypothesis 1: One aspect of the action orientation personality trait is that action-oriented individuals tend to focus primarily on taking actions (i.e., an action-oriented disposition) to deal with the negative situations they encounter. Therefore, relying upon research investigating consistency factors, we predict that action-oriented individuals should experience relatively greater regret when they engage in a behavior that is inconsistent with their orientation (an inaction) and relatively less regret when they engage in a behavior that is consistent with their orientation (an action).

Hypothesis 2: We make very different predictions for state-oriented individuals. Rather than focusing on actions that could potentially alleviate their situation, research shows that state-oriented individuals focus predominately on the negative aspects of the problem itself and are unable or perhaps unwilling to deal with the negative affect (Kuhl & Kazen, 1994). Thus, it seems likely that state-oriented individuals' predisposition will make them more likely to experience high levels of regret and less likely to be affected by the action or inaction impetus behind their decisions. Therefore, state-oriented individuals will perceive high feelings of regret regardless of whether they are evaluating a situation that involves an action or inaction.

In order to test our hypotheses, we conducted two experiments and observed how action and state-oriented individuals differed in their reported regret ratings of a bad event that involved them making a decision to act or not to act. In our first study, we conducted an experiment using a hypothetical decision-making task that involved a choice between either an action (going out) or inaction (staying home), and in both cases a distressing event occurred. We then measured participants' reported feelings of regret. In our second experiment, we placed participants in an experimental setting and had them make real decision choices. Their decisions involved either action or inaction, both with the same negative outcome. Afterward, we asked them to report their feelings of regret resulting from their decision.

2 Experiment 1

2.1 Method

2.1.1 Participants and Design

One-hundred and twenty one undergraduates participated in the study and received credit toward their class requirement in psychology. Participants were run in groups containing an average of approximately fifteen people. The design of our study was a 2 (orientation: action, state) x 2 (behavior: action, inaction) between-subjects factorial design.

2.1.2 Procedure

Participants were first informed that the purpose of the study was to investigate their opinions about a situation. All participants were presented with the action orientation scale, a well-validated measure of action-state orientation (Diefendorff, Hall, Lord, & Streat, 2000; Kuhl, 1994). The action-orientation scale consists of three subscales, but for the purposes of our study we focused only on answers provided to items in the threat-

related subscale (Diefendorff et al., 2000). The threat-related subscale (shown in the Appendix) consists of 12 threat-related actions and asks how individuals deal with these actions (Kuhl, 1994). These items reflect individual action-oriented participant’s ability to detach themselves from undesirable events or unobtainable goals, as well as state-oriented individual’s inability to deal with undesirable experiences and failure. This is associated with their rumination upon these unpleasant events, including failure.

Next, we randomly assigned participants to either the action or inaction condition and asked them to recall a life-event, a method that allows for real life assessment instead of relying on purely hypothetical situations (Sanna, Turley-Ames & Meier, 1999). Across both action and inaction conditions, participants were first asked to think about a situation in which they were deciding between going out and staying home. Participants in the action condition were asked to imagine that they decided to go out and then, after going out, they realized that they would have had a better time staying at home. Similarly, participants in the inaction condition imagined that they had decided to stay at home and, after staying at home, they realized that they would have had a better time going out.

Finally, we asked participant’s to indicate their level of regret by asking them the following question (inaction condition in parentheses): “Given the above situation, how much regret do you feel from going out (not going out)?” We used a 101-point scale where 0 was *none at all* and 100 represented *very much*. Following this question about their regret, we wanted to follow-up and assess participants’ retrospective impression of the recalled life event, specifically, how consistent they felt the action or inaction was for them. We believe that this should provide a measure of participant’s perceived consistency between their orientation and the action/inaction. Therefore, we asked all of our participants to rate how consistent they felt their action or inaction was at the time they made their decision. We again used a 101-point scale where 0 indicated *very inconsistent* and 100 *very consistent*. They were then debriefed about the purpose of the experiment, thanked, and given course credit for participating in the study.

2.2 Results

In order to test our hypotheses, we dummy coded the independent variable of action/inaction. We then performed a regression analysis with participants’ action/state orientation scores and behavior (action or inaction) as our independent variables and reported regret as our dependent variable. This analysis did not reveal any significant main effects but did reveal a significant interaction effect

Table 1: Average consistency as a function of action orientation and behavior, Experiment 1.

	Behavior			
	Inaction		Action	
	N	Mean	N	Mean
State-orientation	28	49.3	28	55.0
Action orientation	31	41.5	34	52.6

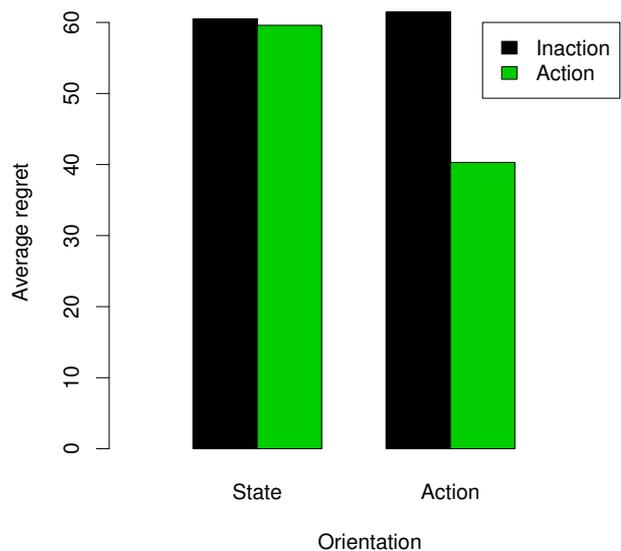


Figure 1: Average regret as a function of action orientation (median split at a score of 6) and behavior, Experiment 1.

between action/state orientation and behavior ($F(1, 117) = 6.1, p < .02$).

To further investigate this finding, we performed additional analyses to investigate the influence of the action/inaction variable for both state and action-oriented participants. As can be seen in Figure 1, the results revealed that state-oriented participants demonstrated no significant difference in reported regret ratings as a function of whether the task involved action or inaction ($F(1, 54) = .03, p > .8$). Action-oriented individuals however, did show significant differences in regret ratings across the conditions ($F(1, 63) = 17.82, p < .001$).

To resolve whether action or state-oriented individuals differed in their perceived consistency of the action/inaction, we chose to explore each group separately. When we examined state-oriented individuals, we found that their reported consistency ratings did not differ across the action/inaction conditions ($F(1, 54) = 1.17, p > .28$). However, when we looked at action-oriented individuals we found that their consistency ratings did dif-

fer across the two conditions ($F(1, 63) = 4.14, p < .05$). As displayed in Table 1, action-oriented participants in the action condition who were assigned to “go out” reported that their behavior was more consistent as compared to the action-oriented individuals in the inaction or “stay home” condition.

3 Experiment 2

4 Method

4.0.1 Participants and design

One-hundred and seventy-five undergraduate students enrolled in introductory psychology classes were recruited for this study. Participants received credit that partially fulfilled their research course requirement and were scheduled in groups containing on average of twelve persons per session. The design of our study was the same as that of Study 1 and included a 2 (orientation: action vs. state) \times 2 (behavior: action vs. inaction) between-subjects factorial design.

4.0.2 Materials

As in Study 1, we gave Kuhl’s (1994) entire action-orientation scale. And, again, we used the subscale shown in the Appendix to determine the extent to which participants maintained a personality predisposition towards either an action or state orientation. Completion of the scale was followed by a decision task that involved either acting or not acting. The decision task we used for this study, however, differed significantly from the one used in our first study.

The decision-making task that we used was modified from a vignette originally developed by Tversky and Kahneman (1981) and has been shown in past studies to be a good measure for investigating feelings of regret under conditions of real rather than hypothetical decision-making (Seta et al., 2001, Study 3). An important distinction between the current decision task and Tversky and Kahneman’s original vignette is that participants are now faced with choices that seemed real about the success of a hypothetical business. Because they are told that archival data from actual case files is being used to judge their responses and that they will be compared to other state universities they are led to believe that the accuracy of their choice will affect not only their own personal score but also that of their university as well.

In addition, this decision task allows for the experimenter to induce most participants to either keep the stock they were initially given (an act of *omission*) or to switch to the stock offered by another company (an act of *commission*). In particular, one option is risky (\$6,000 vs.

\$0 outcomes) and the other is “safe” (\$2,000). The risky option tends to be avoided. It was assigned to the “keep” option for half the participants or the “switch” option for the other half. This aspect of the decision task resulted in a relatively even distribution of action or inaction choices across both action and state-oriented participants: in the omission condition, 60 participants adhered to the manipulation (kept) and 24 did not; in the commission condition, 58 adhered (switched) and 33 did not.

4.0.3 Procedure

Participants were met by an experimenter who described the purpose of the study as an investigation to determine how students at their university perform on a decision-making task relative to other students in the state school system. They were also told that they would complete a decision-making task that involved choosing between one of two company stock options and that their task was to choose the company stock that would make the most profit. Participants were led to believe that the “correct” answer was based on archival data from actual case files and that the profit of each company would contribute to their score. That is, the more the company they chose earned, the better their final score.

After being informed about the nature of the study, participants were presented with the action-orientation scale (Kuhl, 1994). After completion of the scale, they were presented with our decision-making task. For this decision task, all participants read that they could keep stock in Company X or switch to Company Z. If assigned to the “omission directed” presentation (design to push participants toward omission), participants read that if they keep stock in Company X they would make a \$2,000 profit. Alternatively, if they choose to switch to stock in Company Z they would have a one-third probability of making a \$6,000 profit and a two-thirds probability of making no profit. However, if assigned to the “commission directed” condition, participants read that if they keep stock in Company X they would have a one-third probability of making a \$6,000 profit and a two-thirds probability of making no profit. Otherwise, if they choose to switch to stock in Company Z, they would make a \$2,000 profit.

After participants made their choice to either act or not act, they experienced a brief delay of approximately 2 minutes to give the illusion that the experimenter was scoring their response using the archival data of past case files. Participants were then provided with relevant feedback. For all participants, this feedback indicated that they would have been better off choosing the option that they did not select: specifically, if they choose the safe option they were told that they would have gotten \$6,000 with the risky option; and if they chose the risky option, they were told that they got \$0.

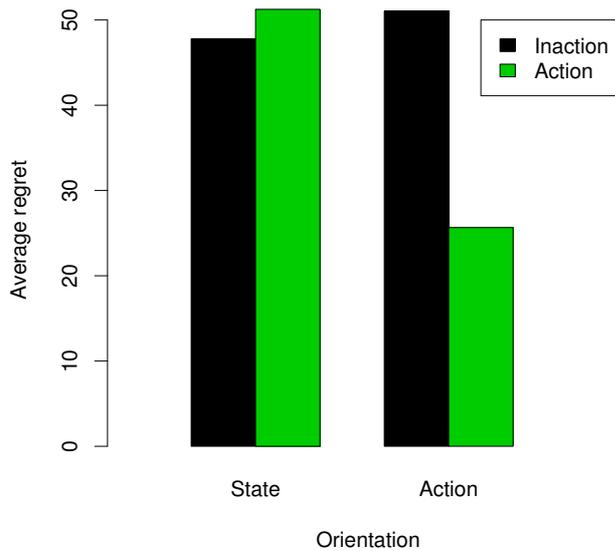


Figure 2: Average regret as a function of action orientation (median split at score of 6 and behavior for decision-making choices, Experiment 2).

After receiving this negative feedback, we told participants that (inaction condition in parentheses) “Before we go on to the next task we would like you to indicate the amount of regret that you feel in having made your decision. That is, your decision to switch companies (keep the stock you already had) and not keep the stock you already had (not to switch companies).” We then asked them “How much regret do you have?” at which point they were presented with a 101-point scale ranging from 0 to 100 (in increments of ten) and asked to circle the most appropriate value for the level of regret they felt about their decision and its resulting feedback. For this regret question, a value of 0 indicated *no regret* and a value of 100 indicated *very much regret*.¹ They were then thoroughly debriefed about the aims of the experiment, thanked, and given course credit for participating in the study.

4.1 Results and discussion

In our methodology, we provided participants with a decision task that allowed them the opportunity to choose either the action or inaction response. Similar to Study 1, we wanted to test our hypotheses involving how action- vs. state-oriented participants experience regret in situations involving action or inaction. However, in this study we also encouraged participants to choose either action or

¹We did not include the follow-up question concerning perceived consistency because this task was dependant upon deception and we were concerned that it may have aroused suspicion in some participants. Further, including it on the same page as the regret question may have influenced the regret response.

inaction by manipulating the status quo (safe or risky option) presented to them. Therefore, we first wanted to test whether participants’ adherence to this manipulation — that is, their choice of the safe option in both conditions — interacted with choice (action, inaction) and orientation (action, state). To investigate this, we first dummy coded participants’ action/inaction choice and adherence. We then performed a regression analysis with level of orientation, choice and adherence acting as our independent variables and participants’ regret responses as our dependent variable. This analysis did not reveal a significant interaction ($F(1, 167) = 1.86, p > .17$), suggesting that the interaction of choice (action, inaction) and orientation on regret did not depend on adherence.

To investigate our main hypotheses — that this interaction would again be found — we next performed a regression analysis as in Study 1 with level of orientation (action, state) and choice (action, inaction) acting as our independent variables and participants’ regret responses as our dependent variable. This analysis revealed a significant main effect for action orientation ($F(1, 171) = 14.82, p < .001$) as well as the omnibus interaction of action orientation \times choice ($F(1, 171) = 5.9, p < .02$).

As can be seen in Figure 2, action-oriented individuals appear to have relatively more regret when they chose not to act than when they choose to act; however, state-oriented individuals appear to have high levels of regret regardless of their decision choice. In order to investigate this observation, we performed further analyses for each of the respective state/action orientation conditions. These analyses revealed that the regret ratings for state-oriented individuals did not differ regardless of whether they performed an action or inaction, $F(1, 98) = .41, p > .5$. We then wanted to examine the regret ratings of action-oriented individuals as a function of whether they performed an action or inaction. This analysis revealed that these individuals did differ in their regret ratings across the two conditions — $F(1, 73) = 39.1, p < .001$ — expressing more regret when they chose not to act (inconsistent condition) than when they chose to act (consistent condition).

Further, action-oriented participants who chose not to act (inconsistent condition) did not differ in their regret ratings from either the state-oriented participants who chose to act ($F(1, 63) = .1, p > .9$) or those who chose not to act ($F(1, 91) = .4, p > .5$). However, action-oriented participants who chose to act (consistent condition) did have significantly lower levels of reported regret than both state-oriented participants who chose not to act ($F(1, 108) = 24, p < .001$) as well as those state-oriented participants who chose to act ($F(1, 80) = 32, p < .001$).

Consistent with our hypotheses and the findings from Study 1, we found that, when action-oriented individuals made a choice that was consistent with their predisposi-

tion (action), they experienced relatively less regret than when they made a choice that was inconsistent with their predisposition (inaction). Conversely, because of state-oriented individuals' inability to regulate negative affect, they did not differ in their regret ratings, experiencing similar levels of regret regardless of whether they chose to act or not to act.

5 General discussion

Across both studies we investigated how felt regret emanates from the consistency between a person's own personality predisposition and their decision to choose an alternative that invokes either an action or relies on inaction. In Study 1, we employed the use of the typical methodology involving a hypothetical vignette of a recalled life event. In Study 2, however, we further explored and extended our investigation placing participants in a situation where they were presented with a choice to make that seemed real to them. They were then forced to choose between alternatives that involved either an action or inaction.

Our results supported our hypotheses and prior research for both hypothetical and realistic situations (e.g., Kuhl & Beckmann, 1994; Seta et al., 2001). State-oriented individuals reported relatively high levels of regret and did not differ in regret responses regardless of whether the situation involved an action or inaction. This finding reflects state-oriented individuals' inability to regulate negative emotion. For those individuals predisposed toward an action orientation, we found that, when they were confronted with a distressful outcome that was consistent with their action orientation (they acted), their level of regret was markedly low, but when they examined a situation where they did not act, this inconsistent behavior led to especially high levels of regret and was similar to the level of regret reported by state-oriented individuals.

These findings further extend the research investigating action orientation and PSI theory. Research exploring action/state orientation has demonstrated that negative mood can have profoundly different effects on action-oriented and state-oriented individuals (e.g., Baumann & Kuhl, 2002). It has also been found that state-oriented individuals are more likely to ascribe a greater number of self-related attributions when encountering negative affect whereas action-oriented individuals are better able to overcome this tendency (Baumann & Kuhl, 2003). Consistent with this research, we found that state-oriented individuals had difficulty overcoming the regretful feelings of a negative outcome for both action and inaction situations suggesting that they were unable to regulate the tendency to place blame on their self. However, action-

oriented individuals were able to overcome regretful feelings as long as their behavior was consistent with their action orientation.

Past research investigating the consistency between an individual's orientation and behavior has demonstrated that inconsistencies between the two lead to relatively greater feelings of regret than consistencies (e.g., Camacho et al., 2003; Connolly & Zeelenberg, 2002; Pieters & Zeelenberg, 2005; Seta et al., 2001). The current research provides further evidence for the significance of the consistency factor and highlights the importance that individuals often place on the consistency between their orientation and subsequent behavior. This finding also extends earlier work involving consistency and regret by providing evidence that the action/state personality predisposition can act as a relevant factor for consistency-based behavioral comparison.

These results also allow for a contrast to be made between scenario situations and decisions that participants thought were real. This is especially important for research concerning regret because there is a great deal of reliance on scenario situations. While some research has included real decisions with real implications (e.g., Gilovich & Medvec, 1994; Seta et al., 2001) most of the present research relies exclusively upon hypothetical vignettes provided to participants. These studies provide empirical evidence that, at least in our situations, there is consistency among both hypothetical and real-appearing decision paradigms.

In a related series of studies, Svenson, Salo and van de Loo (2007) investigated how state and action-oriented individuals may differ in their reactions and recall of real-life situations. They found that, when asked to recall memories of prior decision making events, state-oriented participants reported activity level ratings very similar to action-oriented individuals. This may be related to our current set of findings, such that state-oriented participants may have felt that thinking about decision alternatives is an activity just as action is perceived as an activity in our current studies. Also, Svenson et al., found evidence that state-oriented individuals may be more passive than action-oriented individuals. Their greater passivity may be yet another potential reason for their relative insensitivity to the action/inaction of the event.

Convergence with Decision Justification Theory. A juxtaposition of our findings with the theoretical ideas put forth from DJT yields some interesting speculation for future research. Recall that according to DJT regret is a product of two sources. One source results from self-blame for a poor outcome whereas the other source arises from an outcome comparison and how it was poor relative to a set standard. Although speculative, it seems reasonable to suggest that action and state-oriented individuals may be focusing on different sources for their regret judg-

ments and that these different sources may correspond to those outlined in DJT. Specifically, it could be the case that state-oriented individuals focus more on self-blame for a bad outcome (a factor not so easy to justify) whereas action-oriented individuals may be focusing more on bad-outcome regret which they are sometimes able to justify through consistency. This comparison is indeed speculative but has potential for future research seeking to better understand regret processes.

References

- Aronson, E. (1969). The theory of cognitive dissonance: A current perspective. In L. Berkowitz (Ed.), *Advances in Experimental Social Psychology*, 4, 1–34. New York: Academic Press.
- Bell, D. E. (1982). Regret in decision making under uncertainty. *Operations Research*, 30, 961–981.
- Brehm, J. W., & Cohen, A. R. (1962). Explorations in cognitive dissonance. New York: Wiley.
- Brunstein, J. C. & Olbrich, E. (1985). Personal helplessness and action control: Analysis of achievement-related cognitions, self-assessments, and performance. *Journal of Personality and Social Psychology*, 48, 1540–1551.
- Camacho, C. J., Higgins, E. T., & Luger, L. (2003). Moral value transfer from regulatory fit: What feels right *is* right and what feels wrong *is* wrong. *Journal of Personality and Social Psychology*, 84, 498–510.
- Diefendorff, J. M., Hall, R. J. & Lord, R. G. (2000). Action-state orientation: construction validity of a revised measure and its relationship to work-related variables. *Journal of Applied Psychology*, 85, 250–263.
- Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford, CA: Stanford University Press.
- Connolly, T. & Zeelenberg, M. (2002). Regret in decision making. *Current Directions in Psychological Science*, 11, 212–216.
- Diefendorff, J.M., Hall, R.J., Lord, R.G. & Streat, M.L. (2000). Action-state orientation: Construct validity of a revised measure and its relationship to work-related variables. *Journal of Applied Psychology*, 85, 250–263.
- Gilovich, T., & Medvec, V.H. (1994). The temporal pattern to the experience of regret. *Journal of Personality and Social Psychology*, 67, 357–365.
- Heckhausen, H. & Strang, H. (1988). Efficiency under record performance demands: Exertion control — An individual difference variable? *Journal of Personality and Social Psychology*, 55, 489–498.
- Holyoak, K. J., & Simon, D. (1999). Bidirectional reasoning in decision making by constraint satisfaction. *Journal of Experimental Psychology: General*, 128, 3–31.
- Janis, I. L., & Mann, L. (1968). A conflict-theory approach to attitude change and decision making. In A. G. Greenwald, T. C. Brock, & T. M. Ostrom (Eds.), *Psychological foundations of attitudes*, pp. 327–360. New York: Academic Press.
- Janis, I. L., & Mann, L. (1977). *Decision making: A psychological analysis of conflict, choice, and commitment*. New York, NY, US: Free Press.
- Kahneman, D., & Miller, D. T. (1986). Norm theory: Comparing reality to its alternatives. *Psychological Review*, 93, 136–153.
- Koole, S. L. & Coenen, L. H. M. (2007). Implicit self and affect regulation: Effects of action orientation and subliminal self priming in an affective priming task. *Self and Identity*, 6, 118–136.
- Kuhl, J. (1981). Motivational and functional helplessness: The moderating effect of state versus action orientation. *Journal of Personality and Social Psychology*, 40, 155–170.
- Kuhl, J. (1994). Motivation and volition. In G. d'Ydevalle, P. Bertelson, & P. Eelen (Eds.), *Current advances in psychological science: An international perspective* (pp. 311–340). Hillsdale, NJ: Erlbaum.
- Kuhl, J. (2000). A functional-design approach to motivation and self-regulation: The dynamics of personality systems interactions. In M. Boekaerts, P.R. Pintrich, & M. Zeidner, (Eds.), *Handbook of self-regulation* (pp. 111–169). San Diego, CA: Academic Press.
- Kuhl, J. & Kazen, M. (1994). Self-discrimination and memory: State orientation and false self- ascription of assigned activities. *Journal of Personality and Social Psychology*, 66, 1103–1115.
- Loomes, G., & Sugden, R. (1982). Regret theory: An alternative theory of rational choice under uncertainty. *Economic Journal*, 92, 805–824.
- Markus, H. & Zajonc, R. B. (1985). The cognitive perspective in social psychology. In G. Lindzey & E. Aronson (Eds.), *Handbook of social psychology* (3rd ed., Vol. 1, pp. 137–230). New York: Random House.
- Pieters, R., & Zeelenberg, M. (2005). On bad decisions and deciding badly: When intention-behavior inconsistency is regrettable. *Organizational Behavior and Human Decision Processes*, 97, 18–30.
- Ritov, I. (1996). Probability of regret: Anticipation of uncertainty resolution in choice, *Organizational Behavior and Human Decision Processes* 66, 228–236.
- Sanna, L. J., Turley-Ames, K. J., & Meier, S. (1999). Mood, self-esteem, and simulated alternatives: Thought-provoking affective influences on counterfactual direction. *Journal of Personality and Social Psychology*, 76, 543–558.
- Seta, J. J., McElroy, T., & Seta, C. E. (2001). To do or not

to do: Desirability and consistency mediate judgments of regret. *Journal of Personality and Social Psychology*, 80, 861–870.

Simon, D. & Holyoak, K. J. (2002). Structural dynamics of cognition: From consistency theories to constraint satisfaction. *Personality and social psychology review*, 6, 283–294.

Svenson, O. (1996). Decision making and the search for fundamental psychological regularities: What can be learned from a process perspective? *Organizational Behavior and Human Decision Processes*, 65, 252–267.

Svenson, O., Salo, I., & van de loo, K. (2007). Memories of real-life decisions. *Memory*, 15, 205–220.

Appendix: Threat-related action-orientation subscale

1. When I have lost something very valuable to me and I can't find it anywhere:
 - (a) I have a hard time concentrating on something else.
 - (b) I put it out of my mind after a little while.
2. If I've worked for weeks on one project and then everything goes completely wrong with the project:
 - (a) It takes me a long time to adjust myself to it.
 - (b) It bothers me for a while, but then I don't think about it anymore.
3. When I am in competition and have lost every time:
 - (a) I can soon put losing out of my mind.
 - (b) The thought that I lost keeps running through my mind.
4. If I had just bought a new piece of equipment (for example, a tape deck) and it accidentally fell on the floor and was damaged beyond repair:
 - (a) I would manage to get over it quickly.
 - (b) It would take me a long time to get over it.
5. If I have to talk to someone about something important and, repeatedly, can't find her/him at home:
 - (a) I can't stop thinking about it, even while I'm doing something else.
 - (b) I easily forget about it until I can see the person again.
6. When I have bought a lot of stuff at a store and realize when I get home that I paid too much - but can't get my money back:
 - (a) I can't concentrate on anything else.
 - (b) I easily forget about it.
7. When I am told that my work has been completely unsatisfactory:
 - (a) I don't let it bother me for too long.
 - (b) I feel paralysed.
8. If I am stuck in traffic and miss an important appointment:
 - (a) At first, it's difficult for me to start doing anything else at all.
 - (b) I quickly forget about it and do something else.
9. When something is very important to me, but I can't seem to get it right:
 - (a) I gradually lose heart.
 - (b) I just forget about it and go do something else.
10. When something really gets me down:
 - (a) I have trouble doing anything at all.
 - (b) I find it easy to distract myself by doing other things.
11. When several things go wrong on the same day:
 - (a) I usually don't know how to deal with it.
 - (b) I just keep on going as though nothing had happened.
12. When I have to put all my effort into doing a really good job on something and the whole thing doesn't work out:
 - (a) I don't have too much difficulty starting something else.
 - (b) I have trouble doing anything else at all.