

### Dealing with missed opportunities: action vs. state orientation moderates inaction inertia

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RUNNING HEAD: Dealing with Missed Opportunities

Dealing with Missed Opportunities: Action vs. State Orientation Moderates Inaction Inertia

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## Abstract

Inaction inertia refers to the effect that missing a more attractive opportunity decreases the likelihood to act on an attractive current opportunity in the same domain. We studied the influence of how people cope with negative decision outcomes (i.e., action vs. state orientation) on this inaction inertia effect. Experiment 1 used an experimental induction of action vs. state orientation and confirmed our prediction that state oriented people showed more inaction inertia than action oriented people. Experiment 2 replicated these results with a measure of chronic action orientation and showed a mediating effect of valuation of the current opportunity. Experiment 3 showed that temporal segregation of the current from the missed opportunity decreased inaction inertia effects for state oriented, but not for action oriented people. We discuss the implications of these results for the inaction inertia and action vs. state orientation literatures.

Keywords: inaction inertia, action vs. state orientation, decision making

### Dealing with Missed Opportunities: Action vs. State Orientation Moderates Inaction Inertia

People differ in how they cope with missed opportunities and bad decisions. Some people dwell on missed opportunities, feel bad about them for a long time and do not seem to be able to leave the past behind them. Others get over those failures relatively quickly and focus on how to improve the here and now instead. Extensive research has demonstrated that these differences in coping reflect a fundamental dimension in how people approach current challenging situations and referred to it as state versus action orientation (see for a review, Kuhl & Beckmann, 1994). The present research investigates how this orientation influences an important behavioral consequence of missed opportunities called inaction inertia (Tykocinski, Pittman, & Tuttle, 1995). Inaction inertia refers to the effect that people, after missing out on an initial attractive opportunity, are less likely to act on further opportunities despite their objective attractiveness. We propose that if people differ in the way they cope with missed opportunities, the influence of missed opportunities on current decisions should differ accordingly. This article reports three experiments that demonstrate a weaker inaction inertia effect for action oriented people than for state oriented people.

Inaction inertia implies that decisions to act on an attractive opportunity in the present are negatively influenced by inactions from the past. For example, although people may find the opportunity to book a vacation on discount for \$900 instead of \$1000 very attractive, they will decline it when they missed an earlier opportunity to book it for \$400. Inaction inertia is demonstrated when likelihood to act on an attractive current opportunity is lower when the difference in attractiveness between the missed and the current opportunity is large than when it is small. Thus, the more attractive the missed opportunity (initial inaction) was, the lower the likelihood that people will act on an attractive action opportunity now (inertia). This effect is

very robust and has been found for numerous different decisions, such as for buying shoes or beer, joining fitness centers, booking vacations, investing in the stock market and registering for college courses (Arkes, Kung, & Hutzel, 2002; Butler & Highhouse, 2000; Kumar, 2004; Sevdalis, Harvey, & Yip, 2006; Tykocinski, Israel, & Pittman, 2004; Tykocinski & Pittman, 1998, 2001; Tykocinski & Pittman, 2004; Tykocinski et al., 1995; Van Putten, Zeelenberg, & Van Dijk, 2007, 2008; Zeelenberg, Nijstad, Van Putten, & Van Dijk, 2006; Zeelenberg & Van Putten, 2005).

Because of its robustness, one might expect that whenever people miss a more attractive opportunity to act, all else being equal, the likelihood that they will act on a subsequent opportunity will inevitably decrease. However, because some people seem to get over negative outcomes quicker than others, an important determinant of the influence of missing a more attractive opportunity on behavior might be the way people cope with missing a more attractive opportunity. Action oriented people typically get over negative events quickly, and focus on taking action to solve them, while state oriented people find it typically difficult to overcome a negative event, and keep ruminating about it and how it affects their current state (see for overviews, Dieffendorff, Hall, Lord, & Streat, 2000; Kuhl & Beckmann, 1994). We expect that, compared to state oriented people, action oriented people are less influenced by missing a more attractive opportunity when initiating action on the current opportunity and hence that they are less likely to show the inaction inertia effect.

Note that the main characteristic that distinguishes action oriented people from state oriented people is the ability to disengage from unpleasant events. This does not mean that action oriented people feel less negatively about unpleasant events. Put differently, action and state oriented people will feel equally bad about missing an attractive opportunity, but only state

oriented people will let the previous opportunity influence current decisions. Missed opportunities may influence current opportunities because they are used as an anchor to evaluate the current opportunity (Arkes et al., 2002; Zeelenberg et al., 2006). As a result, people do not act on the current opportunity because it is devaluated under the influence of the missed opportunity. Thus, we think action oriented people will show weaker inaction inertia effects than state oriented people. This decrease in inaction inertia is not the result of action oriented people experiencing less regret after missing a more attractive prior opportunity, but because they are better able to overcome this negative experience when evaluating subsequent events, and thus are less likely to devalue the current opportunity.

We investigated this potential moderating effect of action orientation on inaction inertia in three experiments. In Experiment 1 we experimentally induced action orientation. In Experiment 2 we assessed chronic individual differences in action orientation using Kuhl's Action Control Scale (e.g., Kuhl & Beckmann, 1994). Our main interest in these experiments was how action versus state orientation would affect the likelihood to act on the current opportunity (i.e., the inaction inertia effect). In addition to the effects on likelihood to act, in Experiment 2 we measured experienced regret for the missed opportunity and valuation of the subsequent opportunity. This allowed us to test whether indeed state and action oriented people are as likely to experience regret over the missed opportunity, and whether the differences in likelihood to act are indeed best explained by the (de)valuation of the current opportunity. Finally, in Experiment 3 we examined the process that we assume to underlie our predictions more closely. That is, we manipulated the ease of getting over the missed opportunity by varying time between the missed and the current opportunity. The more time between two events, the more they are seen as segregated from each other (Soman & Gourville, 1998; Trope &

Liberman, 2003). We expected that such segregation between the missed and current opportunity would especially affect state oriented people: Increasing the time between the two opportunities should help them in overcoming the negative event of the missed opportunity and therefore decrease their tendency to fall prey to the inaction inertia effect. We did not anticipate such an effect for action oriented people, because our theoretical reasoning implied that they are already better able to get over the missed opportunity.

### Experiment 1

In this experiment we confronted participants with a standard inaction inertia scenario in which they were deciding about booking a trip to Rome. They first read a part that they missed a very attractive opportunity. Next, we experimentally induced either an action oriented or a state oriented mindset. Because state orientation is typified by rumination about and hanging onto past failures (Dieffendorff et al., 2000; Kuhl, 1981), participants in the state orientation conditions were asked to describe their thoughts and feelings right after they find out about missing an attractive opportunity. Since action orientation is typified by a focus on the present state and focusing on getting over past failures (Dieffendorff et al., 2000; Kuhl, 1981), participants in the action orientation conditions were asked to describe how they could improve the situation. This induction of action and state orientation follows the method of typical mindset priming (cf., Bargh & Chartrand, 2000) and builds on two previous studies that induced an action or a state oriented mindset (Harmon-Jones & Harmon-Jones, 2002; Kuhl, 1981). Finally, participants read that they could still book a less attractive trip to Rome, and subsequently indicated their willingness to book this trip. Our hypothesis was that action oriented people would be less prone to the inaction inertia effect than state oriented people.

#### *Method*

*Participants and design.* One hundred and forty-six students from Tilburg University completed the questionnaire (71 males, 75 females,  $M_{age} = 20$ ). They were randomly assigned to one of the four conditions of a 2 (Difference in Attractiveness: large vs. small)  $\times$  2 (Action Orientation: action vs. state) between-participants design.

*Procedure and measures.* Participants were seated in separate cubicles in the laboratory. We used one of the scenarios of Zeelenberg et al. (2006). Participants were randomly assigned to either the small or the large difference in attractiveness condition. In the condition with a large [small] difference in attractiveness scenario read as follows:

You adore Rome! Shortly you will have a whole week without lectures and you would very much like to visit Rome. A friend tells you that a local travel agency offers a completely organized three-day trip to Rome. You can book the trip this week for €100 [€165] instead of the usual €199. This includes traveling with the High Speed Train and two nights with breakfast at a four star hotel in the center of Rome. He also tells you that you have to hurry before it is too late and the trip is sold out. During the week after you have spoken to your friend, you pass by the travel agency several times and think about booking the trip. However, you do not do so. When you finally want to book the trip it is sold out. You are too late.

Next, participants in the state conditions were instructed to describe the thoughts and feelings they would have in this situation. Participants in the action conditions were instructed to describe what they could do to improve this situation. After this, they turned the page and read the following: “Now your friend calls you again and tells you that, although you missed the previous opportunity, you can still book the trip this week for €170.” After reading the scenario, participants indicated the likelihood that they would book the trip for €170 (0 = *very unlikely*, 10

= *very likely*).

As a check of our experimental manipulation of action orientation participants rated six of the 12 items of the Dutch translation of the 'Failure'-part of the Action Control Scale (ACS-90), a scale typically used to measure participants' degree of action orientation. We opted for this scale because it involves coping with the situations participants in inaction inertia studies typically face: making a decision that is already initiated (people are on their way to act on an attractive opportunity), which turns out less fortunate than expected (on arrival, the opportunity turns out less attractive than expected). This scale originally consists of 12 forced-choice items. Each item describes a stressful situation and participants indicate their preference for either an action or a state oriented way of coping with it. All items are listed in the Appendix. When this scale is used to measure chronic action versus state orientation all items are used. In this experiment on induced orientation, we used 6 items of the scale as a manipulation check. Pretesting showed that these were the items that formed a reliable subscale (items 2, 5, 6, 9, 10, and 11,  $\alpha = .63$ ). State oriented answers were coded 0 and action oriented answers were coded 1. All answers were summed to form an action orientation measure, with higher scores indicating a higher degree of action orientation. The scores on the action orientation measure, which could range from 0 to 6, were centered on the mean, such that people who were scored 0 on the action orientation measure had a mean degree of action orientation. We introduced these questions as questions about participants' personality, and that we were interested in who they were and how they normally act in certain situations. We stressed that there were no right or wrong answers, and that the best answer was the answer that appealed to them the most.

### *Results and Discussion*

*Manipulation check.* First, the effects on the action orientation manipulation check were

analyzed using a  $2 \times 2$  ANOVA. The ANOVA revealed only a main effect for action orientation,  $F(1, 142) = 8.51, p < .01, \eta_p^2 = .06$ . Participants in the action conditions ( $M = 0.22, SD = 1.04$ ) scored higher on the action orientation scale than those in the state conditions ( $M = -0.26, SD = 0.90$ ). This indicated that the manipulation of action vs. state orientation was successful.

*Likelihood to act.* The results on the action likelihood measure are shown in Figure 1. A  $2 \times 2$  ANOVA revealed a main effect of difference in attractiveness,  $F(1, 142) = 71.12, p < .001, \eta_p^2 = .33$ , and a significant interaction effect,  $F(1, 142) = 4.17, p < .05, \eta_p^2 = .03$ . Simple Effect analyses revealed inaction inertia for both action orientation conditions: People were more likely to act when the difference between the missed and the current offer for a trip to Rome was large than when this difference was small in the action,  $F(1, 142) = 22.28, p < .001, \eta_p^2 = .14$ , and in the state conditions,  $F(1, 142) = 50.65, p < .001, \eta_p^2 = .26$ . Note, that as expected, the inaction inertia effect is almost twice as strong in the state as compared to the action conditions. Furthermore, likelihood to act in the large difference conditions was significantly higher in the action condition than in the state condition,  $F(1, 142) = 6.35, p < .02, \eta_p^2 = .04$ . This difference was not significant in the small difference conditions,  $F(1, 142) = 0.11, ns, \eta_p^2 = .00$ . Thus, action oriented people were less influenced by the €100 missed offer in their decision to act on the €170 offer than state oriented people. These results thus clearly support our reasoning that the more people use an action oriented way of coping with stressful situations, the less they show inaction inertia.

## Experiment 2

The results of Experiment 1 indicate that induced action orientation is an important moderator of the inaction inertia effect. Experiment 2 was conducted for two reasons. First, the aim was to validate the results of Experiment 1 with a measure of chronic differences in state

versus action orientation. For this purpose we assessed chronic orientation of our participants a week before running an experiment on the inaction inertia effect with the same standard inaction inertia decision scenario as in Experiment 1.

The second contribution of Experiment 2 was that we now looked at the process underlying the differences in inaction inertia between action and state oriented people. Remember that the main characteristic that distinguishes action oriented people from state oriented people is their ability to let go of unpleasant events when encountering new events. It is not that action oriented people will feel less bad about the unpleasant event than state oriented people, but rather their current and future encounters will be influenced less by what happened in the past. In the inaction inertia domain this would imply that action oriented people may be as likely to regret missing the prior opportunity as state oriented people. Action oriented people may, however, be less prone to evaluate the current opportunity in light of the prior missed opportunity than state oriented people.

We thus reasoned that action oriented people do realize that they missed a more attractive opportunity and therefore, depending on the attractiveness of the missed opportunity, will feel the same degree of regret as state oriented people. However, we expect that the influence of the missed opportunity on the current decision to act will be less strong for action than for state oriented people. Specifically, our hypotheses are that (a) action orientation moderates the inaction inertia effect, (b) action orientation does not affect the regret felt over missing out on the prior opportunity, and (c) this moderating effect of action versus state orientation on inaction inertia is mediated by the differential valuation of the current opportunity.

### *Method*

One hundred and nineteen students (20 males, 99 females,  $M_{\text{age}} = 19$  years) at Tilburg

University volunteered to participate in this study. Participants arrived in the laboratory and completed the 12 questions of the ACS-90 to measure their degree of action orientation. The items are listed in the Appendix. State oriented answers were coded 0 and action oriented answers were coded 1. All answers were summed to form an action orientation measure which could range from 0 to 12, with higher scores indicating a higher degree of action orientation ( $M = 5.74$ ,  $SD = 2.80$ ;  $\alpha = .72$ ). The scores were again mean centered. Participants returned to the laboratory a week later for the seemingly unrelated inaction inertia study. We used the complete, uninterrupted scenario of Experiment 1, which describes missing the more attractive discount of either €100 (large difference) or €165 (small difference). After reading the scenario, participants indicated the likelihood that they would book the trip for €170 (0 = *very unlikely*, 10 = *very likely*). Additionally, we measured experienced regret by asking how much they regretted missing the more attractive opportunity (0 = *not at all*, 10 = *very much*) and valuation by asking them to indicate the amount in Euros they would be willing to pay for the trip to Rome.

### Results

*Likelihood to act.* The effects on likelihood to act of difference in attractiveness (contrast-coded as -1 for small difference and 1 for large difference), the action orientation score and their interaction were analyzed using a linear hierarchical regression analysis (see Table 1, first column). The results revealed a significant interaction effect. The results of simple slope analyses (see Fig. 2) showed that the relation between difference in attractiveness and likelihood to act was significant when the score on the action orientation measure was low (1 SD below the mean;  $\beta = -.34$ ,  $p < .01$ ). Thus, state oriented people showed a lower likelihood to act on the €170 offer when the difference between this offer and the missed opportunity was large than when this difference was small (indicating inaction inertia). There was no effect of difference in

attractiveness when the score on the action orientation measure was high (1 SD above the mean;  $\beta = .06$ , *ns*). These results thus support our hypothesis that action oriented people are less likely to show inaction inertia than state oriented people.

*Experienced regret.* The results on the experienced regret measure were analyzed using a linear hierarchical regression analysis. The results revealed only a significant effect of difference in attractiveness ( $\beta = .43$ ,  $p < .001$ ), showing that people feel more regret when the difference in attractiveness is large than when the difference is small. The fact that the action/state orientation did not affect experienced regret accords with our hypothesis that action and state oriented people are as likely to experience regret over missed opportunities.

*Valuation.* The results on the valuation measures were analyzed using a linear hierarchical regression analysis (see Table 1, second column). The results revealed a significant interaction effect. The results of simple slope analyses (see Fig. 3) showed that the negative relation between difference in attractiveness and likelihood to act was significant when the score on the action orientation measure was low (1 SD below the mean;  $\beta = -.33$ ,  $p = .01$ ). Thus, people with a state orientation were willing to pay less for the current offer when the difference between this offer and the missed opportunity was large than when this difference was small (indicating inaction inertia). There was no such effect of difference in attractiveness when the score on the action orientation measure was high (1 SD above the mean;  $\beta = .19$ , *ns*). There was a slight trend towards a positive effect of difference in attractiveness for action oriented people, but this effect did not reach significance. The results thus support our hypothesis that action oriented people are less likely to devalue the current offer than state oriented people.

*Mediated moderation.* We theorized that the effect of action orientation on inaction inertia was driven by the characteristic of action oriented people to get over the missed

opportunity more quickly than state oriented people. As a result, we expected that the valuation of the current opportunity would suffer less from the missed opportunity for action than for state oriented people, leading to a higher likelihood to act on it. In other words, we tested whether the moderating effect of action orientation on the relation between difference in attractiveness and action likelihood was mediated by the difference in valuation. The mediation analysis is displayed in Table 1. The data show that valuation mediates the moderating effect of action orientation on inaction inertia, because (a) the independent variable, in our case the interaction between action orientation and difference in attractiveness, predicts the mediating variable, in our case valuation (see Table 1, column 2); (b) the mediating variable predicts the dependent variable, in our case likelihood to act; and (c) the effect of the independent variable on the dependent variable is reduced when the mediator is entered into the equation (see Table 1, column 1 vs. 3; Baron & Kenny, 1986). A Sobel test (1982) confirmed that the interaction effect of difference in attractiveness and action orientation on likelihood to act is significantly mediated by valuation,  $z = 2.40, p < .05$ .<sup>1</sup>

### *Discussion*

These results clearly replicate the results of Experiment 1, and support our reasoning that the more people use an action oriented way of coping with stressful situations, the less they show inaction inertia. Moreover, we found that action and state oriented people did not differ in the regret they experienced over missing out on the prior opportunity. Both feel more regret when they could have booked the trip for €100 than when they could have booked the trip for €165. The data on valuation, including the mediation analysis, suggest that the difference in the inaction inertia effect between action and state oriented people is best explained by the degree to which they let the past opportunity influence their valuation of the current opportunity. This

difference in valuation explained the differences in likelihood to book the trip, and thus in the inaction inertia effect.

### Experiment 3

Experiments 1 and 2 revealed that action oriented people show weaker inaction inertia effects, and provided support for the idea that this occurs because they are more likely to get over the missed opportunity. In other words, action oriented people see the current opportunity as segregated from the missed opportunity, allowing them to see the current opportunity as an attractive opportunity. To provide a final test of our reasoning, in Experiment 3 we used the same stimulus materials as in Experiment 2, and additionally varied the amount of time that had passed between the missed and the current opportunity. Time has been shown to moderate the inaction inertia effect (Tykocinski & Pittman, 1998; Zeelenberg et al., 2006), and has been shown to segregate events from each other (Soman & Gourville, 1998; Trope & Liberman, 2003; see also Van Putten et al., 2007). In Experiment 3, we measured participants' action orientation and asked them to respond to the "Trip to Rome" scenario. The time between the occurrence of the missed and current opportunity was either short (3 minutes) or long (3 months). In agreement with the findings of Experiment 1 and 2, we expected that the inaction inertia effect would be stronger for state oriented people than for action oriented people. We expected this to be especially true for the situation where the current and missed opportunity were only segregated by a short time period (3 minutes). However, because our reasoning implied that the differences between action and state oriented people are best explained by their differential ease to get over missed opportunities, we expected this difference to be reduced "as time goes by". Thus, when with an increased time period both opportunities become segregated, state oriented people should become less susceptible to the inaction inertia effect. We did not anticipate such an effect of our

manipulation of time for action oriented people, because our theoretical analysis implied that they are already able to segregate the missed from the current opportunity in the short run.

### *Method*

*Participants and design.* One hundred and fifty students (118 females, 32 males,  $M_{\text{age}} = 20$  years) at Tilburg University volunteered to participate in this study. They were randomly assigned to one of the four conditions of a 2 (Difference in Attractiveness: large vs. small)  $\times$  2 (Time: 3 minutes vs. 3 months) between-participants design.

*Procedure and measures.* Participants arrived in the laboratory and completed the ACS-90 measure of action orientation ( $M = 4.80$ ,  $SD = 2.72$ ;  $\alpha = .72$ ). The scores were again mean-centered. Next, participants continued with the following tasks, the first of which was the inaction inertia study. They read the scenario of Experiment 2 in which we now added information about the time between the missed and current opportunity (3 minutes vs. 3 months). Participants then indicated their likelihood to act (0 = *very unlikely*, 10 = *very likely*).

### *Results*

The effects on likelihood to act of difference in attractiveness (-1 = small difference, 1 = large difference), the time score (-1 = 3 minutes, 1 = 3 months), the action orientation score, and their two-way and three-way interaction were analyzed using a linear hierarchical regression analysis. The results revealed a marginally significant three-way interaction effect ( $\beta = -.12$ ,  $p = .086$ ). The results of simple slope analyses confirmed our reasoning. The interaction between difference in attractiveness and time was significant when the score on the action orientation measure was low (1 SD below the mean;  $\beta = .21$ ,  $p < .05$ ). There was no interaction of difference in attractiveness and time when the score on the action orientation measure was high (1 SD above the mean;  $\beta = -.04$ , *ns*). Thus, the manipulation of time influenced the effect of difference

in attractiveness for state oriented people, but not for action oriented people.

To further interpret these different effects we performed a median split on the action orientation score and compared the means of the state oriented participants to the means of the action oriented participants (see Figure 4). It is interesting to note that simple effect tests show that the inaction inertia effect is present in all conditions, but that the size of the effect differs between conditions. Importantly, in the 3 minutes conditions we replicated the effect revealed in Experiment 1 and 2 that inaction inertia was stronger for state oriented people ( $F(1,142) = 41.74, p < .001, \eta^2 = .23$ ) than for action oriented people ( $F(1,142) = 13.90, p < .001, \eta^2 = .09$ ). In agreement with our reasoning, in the 3 months condition, the inaction inertia effect was equally strong for state oriented people ( $F(1,142) = 18.46, p < .001, \eta^2 = .12$ ) as for action oriented people ( $F(1,142) = 12.24, p < .001, \eta^2 = .08$ ).

### *Discussion*

The findings of Experiment 3 provide more insight into the process explaining the different strengths in inaction inertia effect of action versus state oriented people. The results show weaker inaction inertia effects for state than for action oriented people when only three minutes elapsed between missing the initial opportunity and getting offered the current opportunity. When three months elapsed between the two opportunities, this difference disappeared, because with this increased segregation of both opportunities state oriented people became less susceptible to the inaction inertia effect. These results are consistent with the idea that the differential susceptibility to the inaction inertia effects of action and state oriented people is caused by a difference in their ability to segregate the current from the missed opportunity. Action oriented people are generally able to segregate both opportunities even when both opportunities are close in time. State oriented people are less able to segregate both options; but

temporal segregation facilitates the process of segregating both options, leading to a reduced inaction inertia effect.

### General Discussion

The goal of this paper was to test the idea that the inaction inertia effect is weaker for action oriented people than for state oriented people. The idea was that action oriented people get over missing a more attractive opportunity more easily than state oriented people, because of their typical style of coping with negative outcomes. As a result, the subsequent decision would be less influenced by missing the opportunity for action oriented people than for state oriented people, resulting in less devaluation of the current opportunity and therefore a higher likelihood to act on the current opportunity.

The results of three experiments clearly supported this prediction. Experiment 1 revealed that inducing an action orientation reduced the inaction inertia effect. Experiment 2 replicated this result with an assessment of chronic action versus state orientation instead of a manipulation. Moreover, the results of Experiment 2 also revealed that the moderating effect of action orientation on inaction inertia was mediated by the valuation of the current opportunity. Importantly, action and state oriented participants did not differ in the extent to which they regretted having missed the initial opportunity. Finally, Experiment 3 confirmed that the difference in coping styles between action and state oriented people makes action people segregate the missed from the current opportunity more than state oriented people, which leads to weaker inaction inertia effects. As such, the results of these experiments corroborate that the explanation of the moderating effect of action orientation on the inaction inertia effect lies in the propensity of action oriented people to segregate the missed from the current opportunity and not, for instance, because action oriented people might have more optimistic perspective on life,

or are more positive spirit in general.

These results contribute significantly to the inaction inertia literature. The moderating effect of action versus state orientation is a first demonstration of individual differences in inaction inertia. When people are able to segregate the missed from the current opportunity they are less likely to use the missed opportunity to devalue the current opportunity. This finding is related to earlier research showing attenuated inaction inertia when the missed opportunity was perceived to be segregated from the current opportunity, for example when the missed opportunity was made less comparable than in the usual inaction inertia studies (Van Putten et al., 2007). The current research contributes to this finding by showing that personal differences in the capability to segregate the opportunities have similar effects on inaction inertia, and that the decreased devaluation of the current opportunity in this case causes the inaction inertia effect to decrease.

In addition to these new insights on the moderating effects of action orientation, the current findings are also important with regard to the discussion regarding the cause of the inaction inertia effect. The results replicate earlier findings that the strength of inaction inertia does not depend on the strength of feelings of regret (Zeelenberg et al. 2006). In Experiment 2, the degree of action orientation influenced how much a missed opportunity influenced the decision to book a trip to Rome, while the degree of regret depended solely on the attractiveness of the missed opportunity. Action likelihood thus did not follow the same pattern as regret. It is interesting to see that our finding that action and state oriented people in regretting their inaction accords with recent findings by McElroy and Dowd (2007). When asked to recall an event in which they had been inactive, action and state oriented participants in that study reported equal levels of regret. Taken together, these findings confirm our reasoning that not acting on an

attractive opportunity is equally painful for action and state oriented people, and that it is not the strength of the negative feelings that underlies the present findings. This goes against theories arguing that inaction inertia is primarily a result of anticipated or experienced decision regret (e.g, Kumar, 2004; Sevdalis et al., 2006; Tykocinski & Pittman, 1998, 2001).

The present data are more consistent with the devaluation explanation of inaction inertia, which posits that people refrain from acting on the second opportunity, because they use the missed opportunity as an anchor to estimate its current value. The more attractive the missed opportunity, the more likely that the second opportunity is seen as too expensive (Arkes et al., 2002). In agreement with this notion, Experiment 2 showed that the moderating effect of state versus action orientation on the willingness to act on the current option was mediated by its valuation. State oriented people are more susceptible to the inaction inertia effect because, after missing out on an attractive previous opportunity, they devalue the current opportunity. Note that the fact that we demonstrated moderation suggests that the underlying process is not merely a matter of using the price of the missed opportunity as an anchor to determine the value. The fact that the effects are moderated by differences in action orientation shows that it is more than just a calculative process of using the low price of the missed offer as an anchor. The differences between action and state orientation connect the valuation process to a motivational account in which state oriented people are less able to disengage from missing the attractive offer and consequently devalue the current opportunity. In this sense, our data might be a call for a new way of looking at devaluation in the inaction inertia effect.

The better people are in getting over the missed opportunities, the less these missed opportunities will act as an anchor when evaluating subsequent decisions. In addition to the effects we reported on action orientation, the present data show that situational cues might help

people to let go of missed opportunities (e.g., time, Experiment 3). Previous research might be viewed in a similar way. For example, "dwelling on the past" might be stopped when people see the two events as unrelated (cf., Van Putten et al., 2007), when the difference in attractiveness is justified by a valid reason, for example the first opportunity was unique and therefore exceptionally attractive (Zeelenberg et al., 2006; Experiment 3), when the presence of another subsequent opportunity decreases the importance of the missed opportunity (Van Putten et al., 2008), or when it is clear that people have no other choice than to accept the difference in attractiveness, because they will be unable to avoid the missed opportunity anyway (Tykocinski & Pittman, 1998). Based on the current findings we would not only suggest that these findings may be explained in terms of (de)valuation, but also that the reported effects may be moderated by people's state versus action orientation, such that the situational aids to let go of missed opportunities may have the greatest impact on people with a state orientation.

This raises the question if devaluation is simply a consequence of the strong presence of the missed opportunity, or if devaluation serves a purpose on its own? One possibility, as discussed by Zeelenberg et al. (2006), might be that people devalue the opportunity to comfort themselves and thereby decreasing the negative feelings they have about missing the first opportunity (see also, Van Putten, 2008, Chapter 4). This "souring of the grapes" (c.f. Elster, 1996) may then be a motivational way of dealing with missing a very attractive opportunity, by convincing oneself that it was an unattractive opportunity anyway. If so, this raises some new and interesting questions: Do state-oriented people show more inaction inertia because they are better at this than action-oriented people? Or do action-oriented people not need to sour any grapes because they decouple the missed opportunity from the second opportunity and thus have no reason to comfort themselves? Based on our findings, we are inclined to favour the latter

explanation. It is fair to say, however, that the current data do not yet allow for a definite answer. For that, more research is needed.

The present three experiments investigated the individual differences in inaction inertia once an opportunity is missed. One might also wonder if some people are more prone to the inaction inertia effect than others, because they are more likely to miss opportunities than others. As we discussed above, McDowd and Elroy (2007) showed – like we did – that action and state oriented people did not differ in their regret over inactions. This does not mean that state and action oriented people may not differ in their tendency to be inactive in the first place. In fact, in their reasoning McDowd and Elroy did make this assumption, which seems a plausible one to make. If so, this would mean that there might be two reasons why action oriented people would be less susceptible to inaction inertia: (1) Action oriented people are less likely to be inactive on the first opportunity, and (2) if they are inactive on the first opportunity, they are less likely to stay inactive on a subsequent opportunity. Other personality characteristics might influence the proneness to miss opportunities, for example, differences in maximization (Schwartz, Ward, Monterosso, Lyubomirsky, White, & Lehman, 2002). Maximizers generally want to get the best option available and might be more likely to pass up good opportunities in their search for the best. Satisficers on the other hand, use certain search criteria and act on the option that meets their demands. They might be less tempted to continue searching and therefore less likely to pass up good opportunities. There might be other characteristics that increase the chances of missing opportunities. It might be interesting to look at these individual differences in passing up opportunities as a determinant for the susceptibility to the inaction inertia effect.

In addition to the theoretical contributions, we also presented a methodological contribution by successfully manipulating action versus state orientation in Experiment 1.

Usually, action and state orientation are measured and the score is taken as an independent variable (as in Experiments 2 & 3). This is interesting for two reasons. First, this method of inducing action and state orientation could be used in future research. Manipulation, instead of assignment to conditions based on scores on a scale measuring action vs. state orientation, leads to more efficient randomization of participants. Thus, confounding factors that may influence the results can be more successfully minimized and causal conclusions are more reliably drawn. Second, this might be helpful in certain situations where action or state orientation impairs goal-achievement, which, in an extreme example, is very relevant for people suffering from clinical depression (see for an overview, Kuhl & Beckmann, 1994).

On a more general note, this paper shows that the way people cope with negative prior outcomes has an important influence on subsequent decisions relating to these outcomes. In this sense the difference in action and state orientation might be helpful in understanding other phenomena in decision making where past events interfere with current decisions. For instance, once people invest time, money or effort into a course of action, they are more likely to continue that action than when no prior investments were made (sunk cost effect; Arkes & Blumer, 1985). Based on the current results one could expect that action oriented people will be less susceptible to the sunk cost effect than state oriented people because they are less likely to dwell on their past investments. Instead they may be more likely to stop the project and/or seek other opportunities for investment.

For now, we know that missing a more attractive opportunity does not directly mean a subsequent opportunity will be declined as well. People who are predisposed to get over it easily are lucky in this case, because they will be able to put the missed opportunity out of their minds relatively easily. The ones among us who do not have such a strong chronic action orientation

and who want to avoid inaction inertia effects can try to induce an action oriented mindset, e.g. by think of different ways to improve the situation. This action oriented way of dealing with past inactions might decrease their likelihood of inertia later on.

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## Appendix

The Twelve Forced Choice Questions of the ACS-90 used in Experiments 2 and 3 to Measure  
Action Orientation Failure

1. When I have lost something that is 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. 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
3. 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
4. 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
5. When I have put all my effort in 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
6. If I'm 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

7. When I am told that my work has been completely unsatisfactory

- a) I don't let it bother me too long
- b) I feel paralyzed

8. When I've bought a lot of stuff at a store and realize when I get home that I paid too much - but I can't get my money back

- a) I can't concentrate on anything else
- b) I easily forget about it

9. 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

10. When I'm in a 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

11. If I had just bought a new piece of equipment (for example, a CD player) 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

12. 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.

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Table 1

*Regression Weights of Difference in Attractiveness Action Orientation and their Interaction on Likelihood to Act Valuation and Likelihood to Act when Controlling for Valuation*

|                         | Likelihood to act | Valuation | Likelihood to act<br>(with valuation) |
|-------------------------|-------------------|-----------|---------------------------------------|
| Difference              |                   |           |                                       |
| in attractiveness (DA)  | -.14              | -.07      | -.12                                  |
| Action orientation (AO) | .16               | .10       | .13                                   |
| DA × AO                 | .20*              | .26**     | .11                                   |
| Valuation               |                   |           | .35**                                 |

Note: standardized Beta coefficients are reported \*  $p < .05$ , \*\*  $p < .01$

## Figure Captions

*Figure 1.* Mean Likelihood to Act (Standard Error in Bars) as a Function of Difference in Attractiveness and State versus Action Orientation in Experiment 1.

*Figure 2.* Likelihood to Act as a function of Difference in Attractiveness for Participants with High vs. Low Scores on Action Orientation in Experiment 2.

*Figure 3.* Valuation as a function of Difference in Attractiveness for Participants with High vs. Low Scores on Action Orientation in Experiment 2.

*Figure 4.* Mean Likelihood to Act (Standard Error in Bars) as a Function of Difference in Attractiveness, State versus Action Orientation and Time in Experiment 3.

## Footnote

One might pose an alternative explanation that, in a self-perception manner, people devalue the current opportunity more the less likely they were to act on the current opportunity. This casts doubt on the validity of the mediation analysis, because it suggests that the effect on our mediator (valuation) was actually caused by the effects on our dependent variable (likelihood to act). We tested for this alternative explanation by conducting a second mediation, in which likelihood to act was the mediator and valuation was the dependent variable. We did not find mediation in this direction ( $z = 0.00$ , *ns.*), thereby providing evidence against the alternative explanation that the effects on valuation were caused by our likelihood to act measure.

Figure 1.

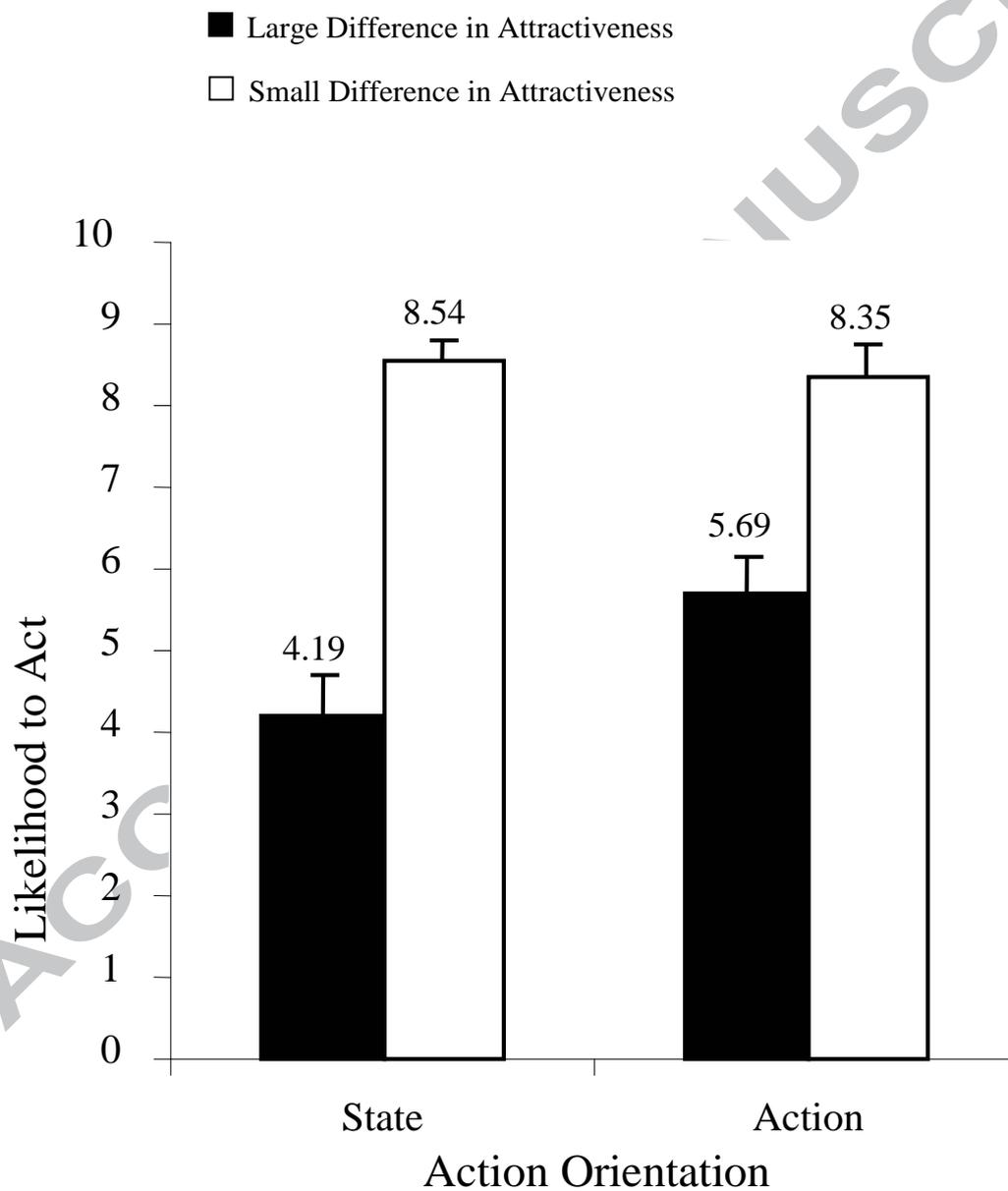


Figure 2

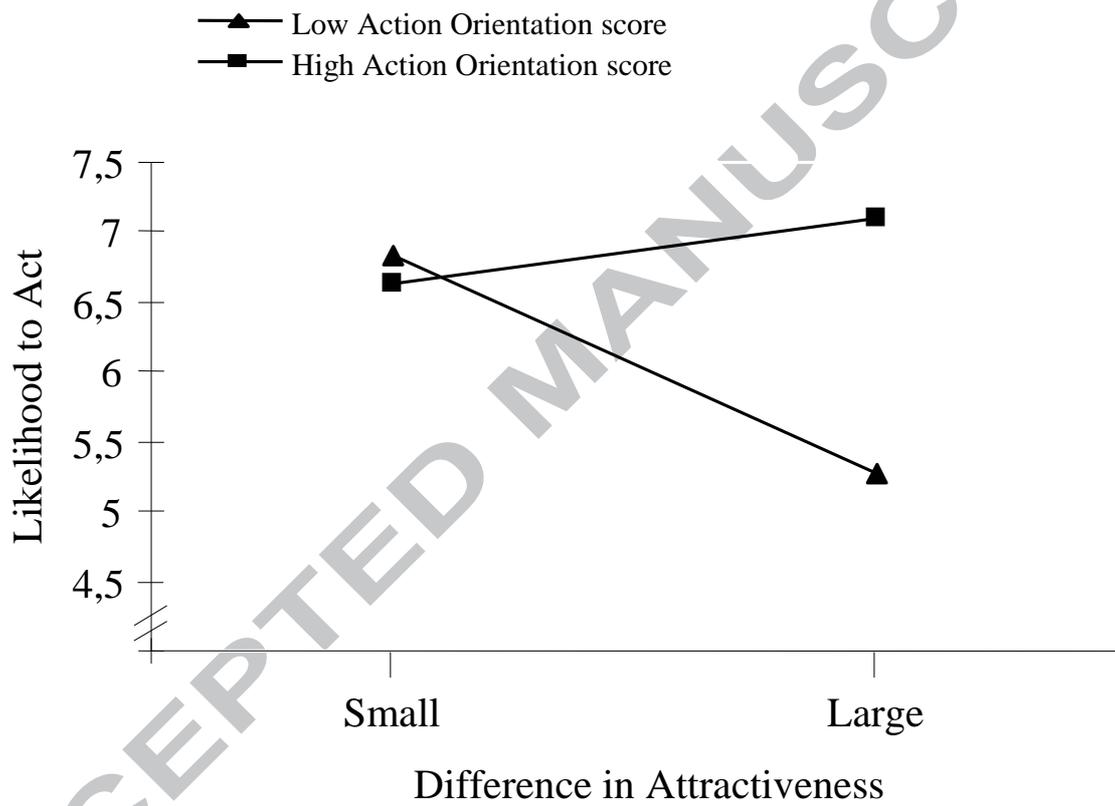


Figure 3.

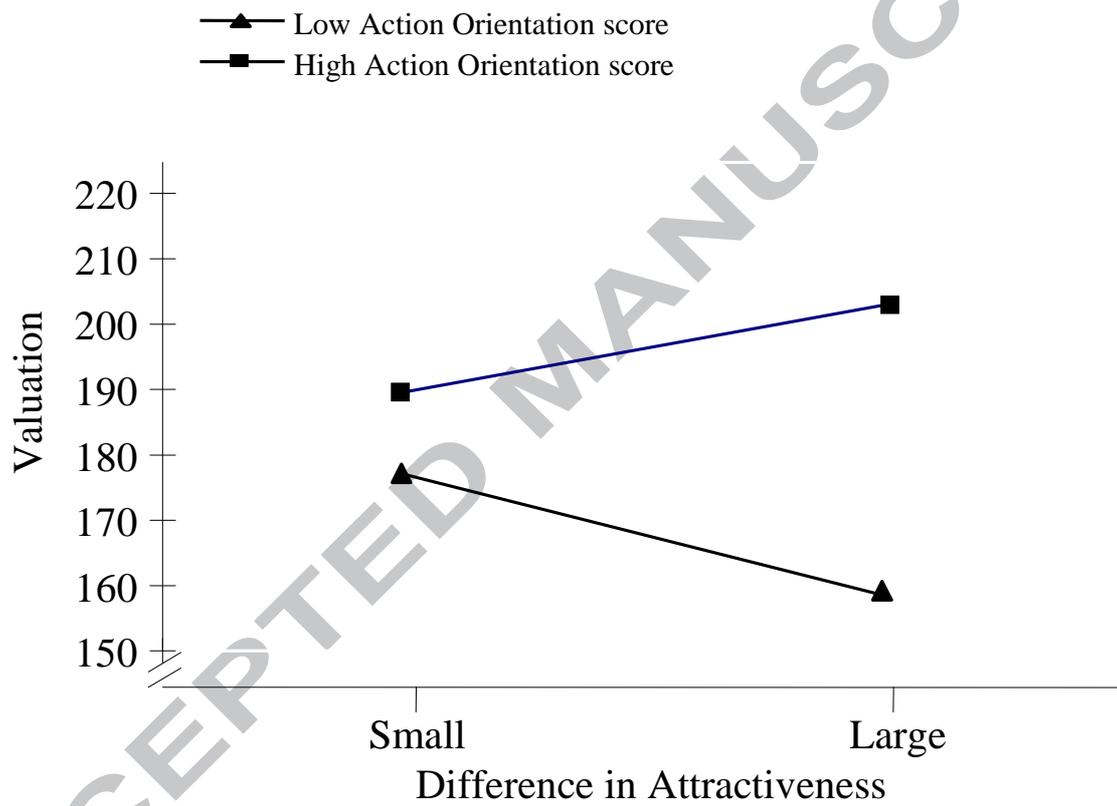


Figure 4

