Having second thoughts: Consequences of decision reversibility

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We know what happens to people who stay in the middle of the road. They get run over.

– A. Bevan
Our lives are replete with decisions. Whereas most of these decisions are irreversible (e.g., deciding to sell one’s car, to quit a job, or to remove a birthmark from one’s face), other decisions allow for corrective action. Such reversible decisions provide the opportunity to change our minds about the chosen course of action, and to adjust our behavior.

People appear to prefer reversible to irreversible decisions. They, for instance, favor shops in which customers are allowed to exchange a purchase within two weeks, or prefer to provide temporary rather than permanent contracts to new employees. Previous research, however, suggests that the actual consequences of reversible decision-making are not quite so favorable. Reversible decision-making, for instance, is associated with reduced choice satisfaction (Gilbert & Ebert, 2002). Apparently, people lack the insight to foresee these unwanted consequences of decision reversibility. They seem to rely on the assumption that reversible decision-making yields better decision outcomes than irreversible decision-making, whereas, in fact, the reverse seems to be true.

Up until now, decision reversibility received little attention from researchers. The aim of this dissertation was to fill this void in the literature. Hence, in four empirical chapters, I presented a series of studies on the behavioral, cognitive and motivational consequences of reversible and irreversible decision-making. Chapters 2 and 3 (part I) focused on the question what happens in people’s minds after reversible versus irreversible decision-making, in an attempt to explain the decreased levels of satisfaction after reversible decision-making. Chapters 4 and 5 (part II) focused on the motivational consequences of decision reversibility, and explored how reversible versus irreversible decision-making affects unrelated behavior subsequent to making one’s decision. In the following section, I will discuss the main findings of this research.

**Part I: what happens in people’s minds?**

In Chapter 2, I aimed to explore the amount of decisional engagement after reversible versus irreversible decision-making. On the basis of the goal fulfillment literature, I argued that as long as the goal to make a decision has not been completely fulfilled (as is the case in reversible decision-making), people remain occupied with the
choice. Arguably, such decisional engagement is driven by the motivation to reach a satisfactory final decision. I suggested that as soon as a decision changes from reversible to irreversible, decisional engagement is immediately reduced in order to make cognitive resources available for other tasks. I thus hypothesized relatively stronger decisional engagement after reversible as opposed to irreversible decision-making. To test this prediction, I used a lexical decision task containing words related versus unrelated to the decision.

Indeed, results showed that decision-related words remain relatively more accessible than decision-unrelated words after having made a reversible instead of an irreversible decision. Interestingly, the effects seem to especially occur on the decision-unrelated (neutral) rather than the decision-related words. That is, for reversible decisions, deactivation of irrelevant constructs took place, rather than activation of relevant constructs. This effect is similar to what is known as goal shielding (Shah et al., 2002). People making a reversible decision appear to shield their goal (i.e., to make a decision) against interference from constructs unrelated to the goal at hand. Furthermore, the results revealed that as soon as the period during which the decision could have been revised had passed (i.e., the decision had become final), the relative accessibility of decision-related constructs immediately decreased. Thus, upon fulfilling the goal to make a decision, the amount of decisional engagement reduced.

A second experiment (Study 2.2), focused on the question whether and how decision reversibility impacts upon people’s cognitive capacity and (subsequently) their levels of regret (a concept related to choice satisfaction). On the basis of the findings obtained in Study 2.1, I expected that reversible decision-making has a negative impact upon people’s cognitive capacity. More specifically, I predicted lower working memory capacity after reversible instead of irreversible decision-making. The results of Study 2.2 supported this prediction. Furthermore, the results revealed that, in line with findings from extant research (Gilbert & Ebert, 2002), those assigned to the reversible decision condition experienced more regret as opposed to their counterparts in the irreversible decision condition. Finally, the effect of decision reversibility on regret was carried indirectly through working memory capacity.
From these findings I concluded that the decision-related thoughts people have after having made a reversible decision are related to the experience of post-decisional regret. As a next step, I intended to gain more insight into the specific content of these thoughts, and, hence, examined what aspects of the decision alternatives (positive versus negative) were particularly accessible after having made a reversible versus irreversible choice. In this way, I hoped to be able to more convincingly explain differences in choice satisfaction and regret.

In Chapter 3, I first replicated the research of Gilbert and Ebert (2002). In this study I used the difference between the attractiveness of the chosen and rejected alternatives (spreading of alternatives) as an indication of participants’ choice satisfaction (Study 3.1). In line with Gilbert and Ebert, results demonstrated that spreading of alternatives is smaller after reversible decision-making. Subsequently, the results of Study 3.2 revealed that after having made an irreversible choice, people relatively attend more to the positive aspects of the chosen alternative and to the negative aspects of the rejected alternative. This finding is in accordance with what one would expect on the basis of cognitive dissonance theory. In other words, irreversible decision-makers attend to aspects of the decision that can help to increase their satisfaction. After having made a reversible choice, however, individuals appear to focus relatively more on the negative aspects of the chosen alternative and the positive aspects of the rejected alternative. Thus, in line with what would be expected from Study 2.2, reversible decision-makers attend more to aspects of the decision potentially decreasing satisfaction. Indeed, the results of Study 3.3 subsequently revealed that these differences in focus, mediated the relation between decision reversibility and choice satisfaction (as indicated by differences in spreading of alternatives).

**Part II: the motivational consequences of decision reversibility**

The findings of Chapter 3 suggested that reversible decision-making yields people to especially focus on those aspects of the decision that provide information about the presence of a negative decisional outcome, as this type of information specifically indicates whether revising is necessary. Irreversible decision-making, on the other hand, yields individuals to focus on those aspects of the decision that provide information about the presence of a positive decisional outcome, as this type of
information enhances their perception of having made a proper choice. Obviously, this is especially important for people not having the opportunity to revise their decision. These findings help to relate decision reversibility to regulatory focus theory (Higgins, 1997, 1998, 2002). According to regulatory focus theory, individuals who are concerned with the presence or absence of a negative outcome are prevention-oriented, while individuals who are concerned with the presence or absence of a positive outcome are promotion-oriented. As such, and on the basis of the findings described in Chapter 3, I suggested that reversible decisions, compared to irreversible decisions, tend to enhance a prevention focus more than a promotion focus. The goal of Chapter 4 was to test this line of reasoning. Results indeed revealed that reversible decisions, compared to irreversible decisions, are associated relatively more with a prevention focus than a promotion focus\textsuperscript{14}, as indicated by 1) an enhanced concern with avoidance 2) higher accuracy 3) stronger local processing 4) greater outcome value from a better fit with chronic prevention concerns, and finally 5) a relatively greater interest in prevention-related product features. This tendency to become more prevention than promotion-focused can be traced to the pre-decisional phase. It seems that the simple awareness that one has to make a reversible decision immediately leads to a tendency to be more cautious.

The goal of Chapter 5 was to see whether the regulatory motivation induced by the reversibility of the choice also carries over to the post-decisional phase. More specifically, Chapter 5 was designed to examine the relation between decision reversibility on the one hand and creativity and analytical ability on the other. Creativity has been found to profit from a promotion focus while analytical ability has been found to benefit from a prevention focus (Friedman & Förster, 2000; 2001). As such, it was predicted that those having made an irreversible decision would perform better on a creativity task, whereas those having made a reversible choice would perform better on a task that assesses analytical ability. The results of Study 5.1 and 5.2 supported these predictions, and suggest that the motivational effects of decision reversibility also carry-over to the post-decisional phase – the phase after the (initial) decision has been made, and, as such, affect performance on subsequent (unrelated) tasks.

\textsuperscript{14} Although I found reversible (compared to irreversible) decisions to relatively strengthen a prevention focus more than a promotion focus, from now on, I will refer to this difference as ‘reversible decisions tend to strengthen a prevention focus more as compared to irreversible decisions’.
Altogether, this dissertation provides insight into the consequences of decision reversibility. While earlier research on the topic related decision reversibility to post-choice satisfaction, the current research moved beyond that, and, in doing so, provided four key insights into this topic. First, the relative amount of decision-related thoughts people are occupied with (strength of decisional engagement) differs depending on the reversibility of the choice. Second, reversible and irreversible decision-makers focus their attention to different aspects of the decision, which, in turn, influences their choice satisfaction. Third, decision reversibility has an impact on regulatory motivation in the pre-decisional phase, and fourth, this regulatory motivation carries over to the post-decisional phase – to tasks unrelated to the decision at hand.

**Distinguishing decision reversibility from other constructs**

In the studies reported in this dissertation, decision reversibility was always manipulated by giving – or not giving – participants the option to revise their preliminary choice at a later point in time. Participants were always aware of the (ir)reversibility of the decision, prior to actually making the choice. This manipulation is similar to that being used in previous research (see Frey, 1981; Frey, 1986; Frey, Kumpf, Irle, & Gniech, 1984; Frey & Rosch, 1984; Gilbert & Ebert, 2002). There is, however, some overlap between the manipulation used in the present dissertation and manipulations of task (in)completion (e.g., Wicklund & Gollwitzer, 1982). In research on task (in)completion, a condition in which a task is fully completed is contrasted with a condition in which a task is being interrupted by another task and therefore not yet completed. I discussed this possibility in Chapter 4 of this dissertation, and argued that the manipulation of decision reversibility is in fact another way of inducing task (in)completion. This especially applies to the post-decisional phase. However, when measuring the effects in the pre-decisional phase, the comparison with (in)completion is less easy to make, because during the pre-decisional phase the decisional task is still incomplete for all individuals. In four of the studies reported in Chapter 4, the dependent measurements were administered before participants actually indicated their choice. Nonetheless, the manipulation of decision reversibility still affected a variety of measures, implying that, irrespective of task (in)completion, decision reversibility has a unique impact on a variety of related and unrelated tasks.
Some readers may have also noticed similarities between decision reversibility and decisional procrastination. The latter involves having the intention to decide, but then act contrary to that intention by delaying (Sabini & Silver, 1982). Hence, both decision reversibility and procrastination provide the decision-maker with more time to reach a final decision. Research on decisional procrastination has shown effects in line with some of the findings presented in this dissertation. Frost and Shows (1993), for instance, showed that decisional procrastination is associated with the motivation to minimize the risk of making a mistake. This motivation seems similar to Higgins’ prevention focus as discussed in Chapter 4. Hence, at least on a motivational level, reversible decision-making and choice procrastination seem to share some commonalities. Nevertheless, on a conceptual level, they are quite different from one another. Although both prolong the decision-making process, only in case of reversible decision-making, people already indicate a decision for one of the choice alternatives prior to reaching a final decision. In case of a procrastinated choice, however, the decision-maker waits before making a final decision, but does not initially commit him/herself to one of the choice alternatives. Thus, in case of a reversible decision, decision-makers indicate their choice twice (a preliminary and final choice). In case of a procrastinated decision, decision-makers primarily postpone the decision, and only indicate their choice once (a final choice). To illustrate, imagine a person being in a shop to buy one of two sweaters. With reversible decision-making, the individual would learn about the two-week return policy and immediately buy (and thus decide between) one of the sweaters. Only when this person would want to switch sweaters, he/she would return to the shop within two weeks and change the initially chosen sweater for the other one. With decisional procrastination, however, the person would probably go home – not yet decide – and maybe return to the shop later to finally buy one of the sweaters. Thus, in contrast to the reversible decision-maker, the procrastinated decision-maker does not already commit him/herself to one of the choice alternatives prior to making a final decision.

**Revise or recommit?**

The fact that reversible decision-makers show themselves committed to the preliminary chosen option is illustrated by all research on the topic of decision reversibility showing that people hardly ever choose to revise their initial choice. In
Chapter 2 and 3 I argued that the endowment effect may underlie this tendency of individuals to stick to the preliminary chosen object. The endowment effect refers to the phenomenon whereby individuals value an object more because they possess it (Kahneman, Knetsch, & Thaler, 1990; Thaler, 1980). As such, reversible decision-makers may especially be reluctant to revise, because they already experience a sense of ownership.

Although the endowment effect may indeed be a valid explanation, on the basis of previous research and findings from the present dissertation, one may also suggest that people’s general reluctance to revise is (at least in part) due to the prevention focus that is enhanced by reversible decision-making. As shown in Chapter 4 of this dissertation, reversible decisions tend to strengthen a prevention focus more than a promotion focus. This is not the case for irreversible decisions. Liberman, Idson, Camacho, and Higgins (1999) argued that an approach or risk seeking strategy (i.e., a promotion focus) would lead to more openness to change, whereas an avoidance or conservative strategy (i.e., a prevention focus) would lead to less openness to change. In line with this proposition, they found that reluctance to exchange previously possessed objects was stronger for people in a prevention focus than for people in a promotion focus. As such, it could be argued that the reversibility of the decision may decrease people’s willingness to change, because of the prevention focus it triggers. This explanation points toward an interesting paradox where people’s motivation to embrace the opportunity to continuously re-evaluate, and potentially change, one’s preferences, in fact leads them to become more reluctant towards such change.

When revising is still an option

The period during which individuals are able to change their minds about the preliminary choice is often quite considerable. For instance, when referring to the personal example I gave in the introduction of this dissertation, the period during which I could change the chosen pair of boots for another pair lasted for a week. Many consumer products other than skiing boots can be returned even for weeks after purchase, and in hiring personnel, probationary periods are often as long as a year. In the research described in this dissertation, however, the period in which participants could revise their choice never exceeded forty minutes. This situation differs
significantly from many choice situations in real life, and, as such, certain effects might have been different when being measured a few days (or even weeks) after the (ir)reversible choice.

The degree to which decision reversibility will yield similar effects after an extended period of time may well depend on whether the dependent measure is related or unrelated to the decisional task. More specifically, one could argue that similar effects will be obtained when the dependent measure is inherently related to the choice, because a related task will likely remind the individual about the reversibility of the past decision. A task measuring choice satisfaction is a good example of such a decision-related task. Asking how satisfied one is with the chosen alternative even a few weeks after the decision has been made, most likely reminds the individual about the reversibility of the respective choice. Accordingly, the reversibility will likely still have an impact on the decision maker’s choice satisfaction. Research by Gilbert and Ebert (2002) indeed demonstrated spreading effects similar to those found in Chapter 3, as long as eleven days after the (ir)reversible decision was made.

Contrary to choice related tasks, choice unrelated tasks (e.g., creativity tasks) will less automatically remind us about the past decision, let alone about its reversibility. For these tasks, it may be necessary that the task is carried out not too long after the reversible choice has been made, or that other (situational) factors are present to remind the individual about the reversibility of the decision. Imagine, for example, a situation in which an employer provides a one-year temporary contract to a new employee (a reversible choice). It is possible that every time the two work together during that year, the employer is reminded about the reversibility of the past decision, and the need to make a final decision at some point in the future. Accordingly, as long as the chosen alternative (in this case the chosen employee) reminds the decision-maker about the reversibility of the past decision, it could be the case that also an unrelated task is affected even some time after the preliminary decision has been made. Given the findings reported in Chapter 5 of this dissertation, this could be beneficial in the context of a consultancy office where analytical skills are required, but less of a good thing in a design office where individuals need to be creative.
Possibly, decision reversibility will also affect unrelated tasks later in time as soon as the decision-maker moves closer to the final decision deadline. Imagine the same employer as described in the example above. After almost a year, he/she has to decide whether or not to extend the temporary contract. Likely, the closer the employer gets to the decision deadline, the more the reversibility of the past decision becomes salient, and, hence, the stronger the effects of decision reversibility will be. It would be interesting to explore under what conditions the effects reported in the current dissertation will be stronger or weaker after an extended period of time.

**Freedom of choice**

We live in a society in which freedom has fundamental value. Freedom in its broadest sense is the state of not being constrained by things or others around us (Schwartz, 2000). Freedom often refers to political and economic freedom, both of which essentially are the freedom to choose. Having choice is essential to autonomy and control and is therefore a core value in today’s society. Freedom of choice entails the freedom to make our own decisions. Implicit in this high valuation of freedom to choose is that people know what makes them happy, and hence that they enjoy life more if they can pursue their own preferences. Freedom of choice is assumed to be greater with reversible decisions. Naturally, having the option to revise enhances the chance of ending up with the best decision outcome.

The favorable attitudes people hold towards reversible decisions, might reflect a socially shared subjective theory on decision-making, and may, therefore, be deeply rooted and likely difficult to change. Yet, there might be ways to gain something positive from the preference for reversible decision-making. For instance, as being discussed in Chapter 4, according to the value-from-fit hypothesis (Higgins; 2000, 2002), people derive value not only from the decision outcome, but also from the process by which the decision was made. Indeed, the results of Study 4.4 reported in this dissertation showed that people with a chronic prevention focus, compared to people with a chronic promotion focus, were more satisfied with their decision when this decision was reversible. Apparently, people who have safety or security concerns (i.e., a prevention focus) are better prepared for the processes activated by decision reversibility, and hence these types of individuals are not as negatively affected by reversible decision-
making. This finding provides a boundary condition for some of the effects reversible decisions tend to produce. Future research may want to explore other possible boundary conditions in order to provide insight into the circumstances under which people can hold on to their wish for freedom of choice.

**Concluding thoughts**

I started the introduction of this dissertation with a personal example. In this example, I referred to a skiing holiday for which I had bought ski’s back in the Netherlands (an irreversible choice) and for which I had bought boots at the holiday destination that I could try, and, if desired, return to the shop (a reversible choice). I described the happiness that I felt with my skis, but also my lack of enthusiasm about the chosen boots when driving back home. The findings of the present dissertation indicate that this lack of enthusiasm was likely due to me being focused especially on the negative aspects of the boots. Furthermore, they explain my unusual slow descents during the holidays: the reversible decision to buy the boots made me relatively prevention focused, and therefore more vigilant and careful. The research described in the current dissertation aimed to shed light onto the consequences of decision reversibility. I hope it also inspires subsequent research onto how this prevalent type of decision affects our lives, on and off the ski slopes.