

Investigating the Appraisal Patterns of Regret and Disappointment¹

Wilco W. van Dijk^{2,4} and Marcel Zeelenberg³

Regret and disappointment are the two emotions that are most closely linked to decision making. This study compares the appraisal patterns of the two emotions. This is done in the context of the related negative emotions anger and sadness. The results show clear differences between regret and disappointment in this respect while replicating prior findings concerning the appraisal patterns of anger and sadness. The results are of interest for emotion researchers and decision researchers.

KEY WORDS: regret; disappointment; appraisal.

Regret and disappointment are the two emotions that are most closely related to decision making. When a decision turns out badly we feel disappointed when we had expected a better outcome, and we feel regret when we realize that the outcome would have been better had we chosen differently. Much is already known about the psychology of these two emotions. For example, they both are differently related to counterfactual thinking (Zeelenberg, van Dijk, van der Pligt, et al., 1998); the investment of effort (van Dijk, van der Pligt, & Zeelenberg, 1999); responsibility (Ordóñez & Connolly, 2000; Zeelenberg, van Dijk, & Manstead, 2000); and to the type of negative outcome (i.e., the presence of a negative outcome vs. the absence of a positive outcome; van Dijk, Zeelenberg, & van der Pligt, 1999). Regret and disappointment have different phenomenologies (Zeelenberg, van Dijk, Manstead & van der Pligt, 1998), and differentially impact behavior (Pfister, van der Pligt, & van Dijk, 2001; Zeelenberg & Pieters, 1999). Most of this research is

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²Department of Social Psychology, Vrije Universiteit, Amsterdam, The Netherlands.

³Department of Social Psychology, Tilburg University, Tilburg, The Netherlands.

⁴Address all correspondence to Wilco W. van Dijk, Department of Social Psychology, Vrije Universiteit, Van der Boechorststraat 1, 1081-BT Amsterdam, The Netherlands; e-mail: ww.van.dijk@psy.vu.nl.

reviewed in Zeelenberg, van Dijk, Manstead, & van der Pligt (2000). However, as we will demonstrate later, little is yet known about the appraisal patterns of these two emotions. It is the goal of the present research to provide more insight into these matters.

We argue that it is important to gain more insight into the appraisal patterns of regret and disappointment, as this knowledge helps us to better understand the ways in which these two specific emotions may impact behavior. We contend that even closely related emotions, such as regret and disappointment, have distinctive effects on behavior (cf., Zeelenberg & Pieters, 1999). Moreover, these distinct effects are best understood when there is knowledge about the antecedents and phenomenology of the emotions. Such insight would provide valuable information about a much wider scope of behavior than decisions under uncertainty, which are the traditional behaviors focused upon by regret and disappointment theorists (Bell, 1982, 1985; Inman, Dyer & Jia, 1997; Loomes & Sugden, 1982, 1986; Mellers, Schwartz, & Ritov, 1999).

APPRAISAL THEORY

One of the most influential current psychological approaches to emotions is appraisal theory (for a contemporary review of the developments in appraisal theory, see Scherer, Schorr, & Johnstone, 2001). Appraisal theory states that each emotion can be related to specific patterns of evaluations and interpretations of events (appraisals). Most theorists argue for a strong causal relationship between appraisals and emotions. Lazarus (1991), for example, argues that appraisals constitute the sole and complete proximal determinants of an emotional experience. Some, however, state that although appraisals may characterize emotions, it is not yet clear that they always cause emotions or determine which specific emotion is experienced (e.g., Frijda, 1993; Frijda & Zeelenberg, 2001; Parkinson, 1997). For our current purposes, distinguishing regret from disappointment, the mere existence of a relationship between appraisals and emotions is sufficient, and hence, our conceptualizations of appraisals as cognitions about the perceived antecedents of emotional experiences.

In this study, we explicitly examine the relations between regret and disappointment, and nine appraisal dimensions proposed by Roseman, Antoniou, and Jose (1996). We opted for Roseman et al.'s approach for a variety of reasons, one theoretical and two methodological. The theoretical reason is that the appraisal dimensions in Roseman et al.'s approach are very comprehensive, as they were derived from many different appraisal theories (e.g., Frijda, 1986; Lazarus, 1991; Roseman, 1984; Scherer, 1984; Smith & Ellsworth, 1985; Smith & Lazarus, 1990; Weiner, 1985) and were found to differentiate a large number of emotions.

The two methodological reasons have to do with the way in which appraisals are often measured. Often participants are asked to give ratings, characterizing the event in which the emotions were experienced. As Roseman et al. (1996) pointed out, this methodology might suffer from at least two problems. First, asking for ratings characterizing the content could be different from asking about the cause of an experienced emotion (see also, Frijda, 1993; Parkinson & Manstead, 1992; Roseman, Spindel, & Jose, 1990). This could lead to a less correct identification of the causes of emotions. Second, emotion episodes described by participants could encompass several emotions, each with their own appraisal determinants (see also, Smith & Ellsworth, 1987). Roseman et al. (1996, p. 245) stated that "Unless the subject is instructed to specify the appraisals that are relevant to the primary emotion under investigation, appraisals relevant to other emotions may be reported, obscuring true appraisal-emotion relationships."

First, we will briefly outline the appraisal dimensions that are central to Roseman et al.'s approach (Roseman et al., 1996). *Unexpectedness* refers to whether an event was expected or unexpected. *Motivational state* refers to appraising an event as relevant to appetitive motives (wanting to get or keep something pleasurable) or as appraising an event as relevant to aversive motives (wanting to get rid of or avoid something painful). *Situational state* refers to whether events are consistent or inconsistent with a person's motives, that is, appetitive or aversive motives. *Probability* refers to whether the consequences of an event are seen as certain or uncertain. *Control potential* refers to the perceived ability to control or do something about the event. *Legitimacy* refers to whether a person thinks of himself or herself as being morally right in the event. *Own power* refers to whether a person feels of himself or herself as powerful or powerless. The appraisal of *Problem source* refers to whether an event is attributed to characterological (e.g., thinking that the event did reveal the basic nature of someone or something) or noncharacterological factors. The last appraisal dimension we investigated in relation to disappointment is *Agency*. In this study we distinguished three different types of agency appraisals, that is, self-agency (event caused by the self), other-person-agency (event caused by someone else), and circumstances-agency (event caused by circumstances beyond anyone's control).

Thus, the question we address in this paper is, What are the appraisal patterns of regret and disappointment? We investigate these appraisal patterns in the context of two related negative emotions: *sadness* and *anger*. These two were selected because of their relations with regret and disappointment. Regret and disappointment are hardly ever experienced in isolation. The experiences are closely linked to other negative emotions. For instance, it has been argued that sadness and anger can be the result of disappointment (Levine, 1996; Mowrer, 1960). Disappointment about not attaining an expectation or a goal can result in sadness or anger, depending on beliefs about whether the original expectation or goal can be reinstated. Sadness is associated with the belief that goals cannot be reinstated, whereas anger is

associated with the belief that something can be done to reinstate a goal (Levine, 1996).

Thus, a reason for the inclusion of these additional two emotions in our study is that it allows us to compare regret and disappointment to these other negative emotions. A second reason for the inclusion of these emotions is that on the basis of other research (e.g., Roseman et al., 1996; van Dijk & Zeelenberg, 2002) we know which ratings to expect on the different appraisal items for anger and sadness. The findings concerning regret and disappointment would be more reliable if at the same time, within the same study, we replicate the common findings for the other emotions.

APPRAISAL, REGRET, AND DISAPPOINTMENT

The only published study to date that has compared the appraisal patterns of the two decision related emotions, regret and disappointment, is the one reported by Frijda, Kuipers, and Ter Schure (1989, Study 2). They studied the extent to which 32 emotions could be differentiated on the basis of measures of appraisals and emotional action readiness. The results showed that regret and disappointment differed with respect to one appraisal item, "self-agency," and one emotional action readiness item, "attending." Self-agency was measured by means of the question "Were you responsible for what happened or had happened?," and regret scored higher on this item than did disappointment. However, disappointment scored higher on "attending" than did regret, implying that after an experience of disappointment people pay more attention, observe more closely, or try to understand, than after an experience of regret.

In addition to this appraisal study by Frijda et al. (1989) some of our own research seems relevant here (Zeelenberg, van Dijk, Manstead, et al., 1998). In this study we asked participants to recall an instance of intense regret or disappointment, and to indicate what they felt, thought, felt like doing, did, and wanted during this experience. We thus focused on the phenomenology of the two emotions, adopting the approach of Roseman, Wiest, and Swartz (1994). These five aspects—feelings, thoughts, action tendencies, actions, and emotivations—are thought to be core components of the emotional experience. Roseman et al. (1994) have shown that emotions can be differentiated on the basis of these components. The results of our study reveal significant differences between regret and disappointment in each component. The differences were most pronounced for action tendencies (what participants felt like doing during the experience) and for emotivations (specific emotional motives or goals that participants had during the experience). More specifically, we found that the experience of regret could be differentiated from that of disappointment in that the former involves feeling more intensely that one should have known better, thinking about the possibility that one made a mistake, feeling a tendency to kick oneself and to correct one's mistake, and wanting to

undo the event and to get a second chance. We also found that the experience of disappointment, more than that of regret, involves feeling powerless, a tendency to do nothing, a tendency to get away from the situation, actually turning away from the event, and wanting to do nothing.

Our study, revealing as it does different phenomenologies for regret and disappointment, thus goes some way to answering the question of whether the two emotions are associated with different appraisal processes; importantly, as we think of appraisals as cognitions about the perceived antecedents of emotional experiences. The data presented in Zeelenberg, van Dijk, van der Pligt, et al. (1998) are not very conclusive yet, as only one of the four cognitions ("thinking about the possibility that one made a mistake") tested for showed reliable differences between the emotions.

Hence, we see several reasons why the current new study on the appraisal patterns of regret and disappointment is needed. The first is that it is not clear from the data reported in Frijda et al. (1989) whether these differences between regret and disappointment are significant. Moreover, the specific part of the data in Zeelenberg, van Dijk, van der Pligt, et al. (1998) that seems relevant to appraisals does not reveal clear differences either. A second reason is that in both the Frijda et al. data and the Zeelenberg et al. data no explicit distinction was made between what we have recently called outcome-related disappointment and person-related disappointment (van Dijk & Zeelenberg, 2002). The first type, stemming from outcomes that fall below expectations, is the one normally referred to in decision theory and also most often hinted at by emotion theorists. This is the type of disappointment we are currently interested in. We found that the appraisal pattern of this outcome-related disappointment differs from person-related disappointment, which is experienced when for example someone lets you down. Since the type of disappointment was not assessed in Frijda et al.'s study, it remains unclear whether their respondents were referring to outcome-related disappointment or person-related disappointment. Consequently, it is hard to establish whether the obtained appraisal pattern of disappointment is representative of outcome-related disappointment or person-related disappointment, or perhaps a combination of both.⁵ A third reason for this study is that the emotions regret and disappointment, as mentioned earlier, are currently attracting much interest from researchers in different, more applied fields. This makes it even more important to obtain insight into the appraisal patterns of these two emotions.

In sum, this study compares the appraisal patterns of regret and disappointment in the context of the related negative emotions anger and sadness. For this purpose we use the approach developed by Roseman et al. (1996). This research is especially relevant for all the current interest in the behavioral consequences of regret and disappointment.

⁵It is important to note that other studies also suffer from this shortcoming. For example, in some of our own research we have also not made the distinction between outcome-related disappointment and person-related disappointment (e.g., van Dijk, van der Pligt, & Zeelenberg 1999).

METHOD

Design, Participants, and Procedure

Our study had a four-group between-subjects design; Regret versus Disappointment versus Sadness versus Anger. Undergraduate students at a Dutch University ($N = 88$) participated in this study. There were 22 participants in each condition. The study was part of a larger test session, and participants were paid 10 Dutch Guilders (approximately \$4) for their participation. Questionnaires were randomly distributed among the participants. Depending upon the condition they were in, participants were asked to recall and describe a situation in which they felt either intense regret, disappointment about an outcome, sadness, or anger. Next, participants were asked a series of questions designed to measure their appraisals.

Appraisal Measures

We included nine different appraisal dimensions, adopted from Roseman et al. (1996) (see Table I). The first eight dimensions were measured by one

Table I. Appraisal Dimensions and Stems and Scale Anchors for Items Measuring Appraisals

Dimension	Item and scale anchors
Unexpectedness	<i>The event being expected</i> (1) to <i>The event being unexpected</i> (9).
Situational state	<i>Believing that the event improved things</i> (1) to <i>Believing that the event made things worse</i> (9)*.
Motivational state	<i>Wanting to get or keep something pleasurable</i> (1) to <i>Wanting to get rid of or avoid something painful</i> (9)*.
Probability	<i>Being certain about the consequences of the event</i> (1) to <i>Being uncertain about the consequences of the event</i> (9)*.
Control potential	<i>Thinking that there was something I could do about the event</i> (1) to <i>Thinking that there was nothing I could do about the event</i> (9)*.
Legitimacy	<i>Thinking of myself as morally right</i> (1) or <i>Thinking of myself as morally wrong</i> (9)*.
Own power	<i>Feeling that I was powerless</i> (1) to <i>Feeling that I was powerful</i> (9)*.
Problem source	<i>Thinking that the event did not reveal the basic nature of someone or something</i> (1) to <i>Thinking that the event did reveal the basic nature of someone or something</i> (9).
Agency	
Self	<i>Thinking that the event was not at all caused by me</i> (1) to <i>Thinking that the event was very much caused by me</i> (9).
Other	<i>Thinking that the event was not at all caused by someone else</i> (1) to <i>Thinking that the event was very much caused by someone else</i> (9).
Circumstances	<i>Thinking that the event was not at all caused by circumstances beyond anyone's control</i> (1) to <i>Thinking that the event was very much caused by circumstances beyond anyone's control</i> (9).

Note. An asterisk (*) indicates that responses were reverse-coded to measure an appraisal. This table is based on Roseman et al. (1996).

appraisal item, whereas the agency dimensions was measured by three items (self-agency, other-person-agency, and circumstances-agency). Each (appraisal) item asked whether a particular appraisal had caused the participant to feel the emotion that was recalled. For example, an item assessing the extent to which an appraisal of unexpectedness had caused a participant to feel disappointment was, "My disappointment was caused by: *the event being expected* (1) . . . *the event being unexpected* (9)." For more information about items and response scales measuring each appraisal, see Table I. We opted for measuring the appraisals with single items for reasons of convenience. This clearly made the questionnaire shorter and enabled us to collect all the relevant data in the limited time available. We do realize that multi-item measurement could yield more reliable results and could reveal differences that are difficult to assess with single-items. At the same time, significant results in the predicted direction, obtained with single-item measures do clearly indicate underlying differences. For a more detailed account of these procedures, see Roseman et al. (1996).

RESULTS

The mean scores on the 11 appraisal scales are shown in Table II. These were first entered into a MANOVA, using the recalled emotion as a between-subjects factor. This initial analysis revealed a main effect due to emotion, $F(33, 222) = 2.78$, $p < .001$, $\eta^2 = .29$. Our subsequent analyses first focused on the two emotions that are of central interest in this paper, regret and disappointment. A MANOVA with planned comparisons revealed a significant difference on five appraisal dimensions: unexpectedness, motivational state, control potential, legitimacy, and agency (self-agency and circumstances-agency), $ts > 2.07$, $ps < .05$. Disappointment was more appraised as unexpected, as wanting something pleasurable, as thinking that one was morally right, and as caused by circumstances beyond anyone's control. Regret, on the other hand, was more appraised as thinking that one could do something about the event and as caused by oneself.

Next we conducted analyses per appraisal dimension. When there was an overall differences on a dimension, Student-Newman-Keuls contrast analyses were used to compare the scores for the different emotions. The results of these analyses are also shown in Table II. Participants in the disappointment condition reported that their emotion was related more with wanting something pleasurable than participants in the regret, sadness and anger conditions. Respondents in the regret condition indicated that they thought to a greater extent that they were able to do something about the situation than those in the disappointment, sadness and anger conditions. Moreover appraisals in the regret condition were lower on thinking of oneself as morally right than in the disappointment, sadness and anger conditions. Furthermore, regret participants indicated higher scores on feeling powerful than sadness and anger participants. Finally, regret was more appraised as being caused

Table II. Means for Each Appraisal Item Per Emotion Recalled

Appraisals	Emotions				<i>F</i>	<i>p</i>
	Disappointment	Regret	Sadness	Anger		
Unexpectedness*	7.05	5.45	6.86	6.50	1.98	<i>ns</i>
Situational state	4.73	4.64	3.50	4.14	1.29	<i>ns</i>
Motivational state*	7.45 ^b	5.95 ^a	5.41 ^a	4.27 ^a	7.02	.001
Probability	5.59	5.55	5.00	5.55	<1	<i>ns</i>
Control potential*	3.73 ^a	6.09 ^b	2.50 ^a	3.00 ^a	9.38	.001
Legitimacy*	5.91 ^b	4.09 ^a	5.95 ^b	6.32 ^b	6.06	.001
Own power	3.36 ^{a,b}	4.32 ^b	2.45 ^a	2.64 ^a	4.50	.006
Problem source	5.27	5.45	6.33	6.76	2.89	.04
Agency						
Self*	4.59 ^a	6.55 ^b	3.59 ^a	3.50 ^a	6.96	.001
Other-person	5.73 ^{a,b}	4.64 ^a	5.23 ^{a,b}	6.77 ^b	2.52	.07
Circumstances*	6.64 ^b	3.77 ^a	4.95 ^b	2.36 ^a	11.46	.001

Note. Entries are answers to the questions: “my [emotion term] was caused by” followed by an appraisal item. Participants could answer on a 9-point scale, higher scores indicate more appropriateness of the appraisal item. Items marked with * differentiate between regret and disappointment ($ts > 1.50$, $ps < .05$). Scores within a row with different superscripts differ significantly by SNK, $p < .05$.

by the self, anger was seen as mostly caused by another person, whereas disappointment and sadness were seen as caused by circumstances beyond anyone’s control.

DISCUSSION

In this paper, we examined the appraisal patterns of both regret and disappointment and compared these to the appraisal patterns of two related negative emotions (sadness and anger). We found significant differences on the appraisal dimensions of unexpectedness, motivational state, control potential, legitimacy, and agency (self-agency and circumstances-agency). *Regret* was appraised as thinking that one could do something about the event and as caused by oneself. This pattern is consistent with our predictions and with earlier research on antecedents of regret by ourselves (reviewed in Zeelenberg et al., 2000) and others (e.g., Ordóñez & Connolly, 2000). *Disappointment* was more appraised as unexpected, as wanting something pleasurable, as thinking that one was morally right, and as caused by circumstances beyond anyone’s control. This pattern is again consistent with our predictions and with the findings described in van Dijk and Zeelenberg (2002). Our findings concerning regret and disappointment seem reliable given that we replicate, within the same study, common findings for the emotions of sadness and anger. For example, we found that sadness was associated with low control potential (cf., Frijda et al., 1989; Roseman et al., 1996) and with an agency other than self-agency (cf., Roseman et al.), whereas anger was associated with an appraisal of legitimacy (cf., Roseman et al.) and an appraisal of other-person agency (cf., Frijda et al., Ortony, Clore, & Collins, 1988; Roseman et al.).

The current findings concerning the appraisal patterns of regret and disappointment may help to explain some of the different behavioral consequences of regret and disappointment. For example, Zeelenberg and Pieters (1999) studied regret and disappointment in experiences with service providers. They found that disappointment was more related to complaining behavior than regret, and explained this in terms of responsibility for the negative experience. Indeed we found that disappointment was more related to other person agency and circumstances agency and less related to self-agency, than regret. However, the current findings also show that disappointment is more related to legitimacy than is regret. Hence, the differences in complaining behavior might as well be explained in terms of this appraisal dimension. Would not we expect someone who feels morally right after a negative service experience to be more likely to complain? Future research on the behavioral consequences of regret and disappointment should focus more closely on the different appraisal dimensions and how they might produce different behaviors.

In closing, we would like to make a case for integrating research from different areas, such as decision making and emotions. Research on regret and disappointment should especially benefit from such an integrated approach. Regret and disappointment are studied within the fields of decision making and emotions. Each area makes its own particular contribution to knowledge of the interplay between emotions and behavior. Emotion theories help us to understand the antecedents and phenomenology of disappointment, whereas decision-making research provides more insight into (possible) specific behavioral consequences of anticipated and experienced regret and disappointment. Increased collaboration between these research traditions would prove to be helpful in developing new ideas concerning the interplay between emotions and behavior, and to improve our understanding of the relation between emotions and behavior. Thus, we advocate combining the theories, paradigms, and findings from both decision making and emotion research, and we anticipate that many interesting research questions would emerge from such an integration.

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