APPLIED COGNITIVE PSYCHOLOGY
Appl. Cognit. Psychol. (2007)
Published online in Wiley InterScience
(www.interscience.wiley.com) DOI: 10.1002/acp.1386

The Intensity of Recent and Distant Life Regrets: An Integrated Model and a Large Scale Survey

JEAN-FRANÇOIS BONNEFON[1]* and JIEHAI ZHANG[2]

[1]*Université de Toulouse, CLLE (CNRS, UTM, EPHE), France*
[2]*Shanghai Academy of Social Sciences, China*

SUMMARY

The research considers three predictors of the intensity of life regrets: (a) whether the regretted behaviour is an action or a failure to act, (b) the severity of its consequences and (c) the extent to which the behaviour was justified. It is hypothesised that the intensity of recent and distant regrets will be predicted by different combinations of these predictors. Regression analyses on regrets reported by 957 French adults support this hypothesis. The intensity of recent regrets is predicted by the consequences of the behaviour, and especially so for actions. The intensity of distant regrets is predicted by the consequences of the behaviour and by its justification, the effect of justification being stronger for actions than for inactions. These results are discussed in relation to both laboratory and field studies of regret. Copyright © 2007 John Wiley & Sons, Ltd.

Life is full of regrets, big and small. We kick ourselves over career choices we made years ago—but we also feel sorry (only to a lesser extent) about having bought a suit the wrong shade of blue. Surprisingly, there is little data about what makes our life regrets big or small. Much is known about which life *domains* elicit the biggest regrets (education, career and romance—Jokisaari, 2003; Roese & Summerville, 2005; Stewart & Vandewater, 1999; Timmer, Westerhof, & Dittmann-Kohli, 2005; Wrosch & Heckausen, 2002). Some specific domains have also been thoroughly investigated (e.g. health; Brehaut et al., 2003; Connolly & Reb, 2005). But no study to date attempted to disclose the structural, domain-general predictors of the intensity of life regrets. This is the contribution of this article, in which we organise laboratory findings, untested theoretical conjectures and plain commonsense into an integrated model of the intensity of life regrets, which we then test in a large-scale survey involving nearly 1000 adult respondents.

THE MAIN EFFECTS OF JUSTIFICATION AND SEVERITY

Numerous vignette studies (reviewed in Connolly & Reb, 2005; Connolly & Zeelenberg, 2002) showed that regret over a decision increases when this decision is deemed unjustified. On the contrary, good justification for a decision mitigates subsequent regret if

*Correspondence to: Jean-François Bonnefon, CLLE, Maison de la recherche, 5 allées A. Machado, 31058 Toulouse Cedex 9, France. E-mail: bonnefon@univ-tlse2.fr

this decision turns badly (Crawford, McConnell, Lewis, & Sherman, 2002; Inman & Zeelenberg, 2002; Pieters & Zeelenberg, 2005; Seta, McElroy, & Seta, 2001; Zeelenberg, van den Bos, van Dijk, & Pieters, 2002). Extrapolating from these findings, we might expect that the most intense life regrets relate to unjustified courses of action. But justification is arguably not the sole predictor of regret intensity: Commonsense and some vignette studies (Berndsen, van der Plight, Doosje, & Manstead, 2004; Zhang, Walsh, & Bonnefon, 2005) suggest that regret over a course of action is influenced by the perceived severity of its consequences.

What we have considered so far is a simple push-pull model of the intensity of life regrets: Regret over a decision is positively correlated with the severity of its consequences, and negatively correlated with the quality of its justifications. There are reasons to think, however, that this simple picture is complicated with a temporal pattern that involves the distinction between an action and a failure to act.

THE TEMPORAL PATTERN TO REGRET

Extensive laboratory research indicated that people experience more regret over actions than inactions which led to the same bad outcomes, at least in the short term (Byrne & McEleney, 2000; Feeney and Handley, 2006; Gleicher, Kost, Baker, Strathman, Richman, & Sherman, 1990; Kahneman & Miller, 1986; Kahneman & Tversky, 1982; Landman, 1987—but see Avni-Babad, 2003). However, a robust finding in surveys of life regrets is that long-term regrets tend to be about failures to act, contrary to short-term regrets, which tend to be about actions or to distribute evenly between actions and failures to act (Feeney, Gardiner, Johnston, Jones, & McEvoy, 2005; Gilovich & Medvec, 1994; Gilovich, Medvec, & Chen, 1995; Gilovich, Wang, Regan, & Nishina, 2003; Hattiagandi, Medvec, & Gilovich, 1995; Rajagopal, Raju, & Unnava, 2006; Savitsky, Medvec, & Gilovich, 1997). To explain this phenomenon, Gilovich and Medvec (1994, 1995) made a number of conjectures, some of which suggest that the effect of consequences and justification follow a different temporal pattern for inactions than for actions. We now consider these conjectures.

THE MODERATING EFFECT(S) OF ACTION

Contrary to the consequences of actions, the consequences of inactions are potentially infinite and bounded only by the imagination. Moreover, although the consequences of actions are well-known in both the short term and long term, the consequences of many failures to act may become clear only in the long term (Byrne & McEleney, 2000; Rajagopal et al., 2006). Thus, the perceived consequences of inactions increase and become clearer over time, while the perceived consequences of actions are clear right away and stable over time.

Furthermore, while it is easy for people to remember why they did something, they might have difficulty understanding why they failed to do something and increasingly so over time. As time passes, the reasons for inaction become less salient and less compelling, compared with the reasons for action (Gilovich, Kerr, & Medvec, 1993). As suggested by Gilovich and Medvec (1995), 'The person who passes up Mr. Right often has trouble in retrospect thinking of a truly compelling reason why such a choice was ever made. In contrast, someone who

DOI: 10.1002/acp

mistakenly marries Mr. Wrong can nonetheless recall how much fun he was at one time, how responsible he seemed back then, or how much everyone liked him' (p. 386).

Finally, Gilovich et al. (1995) showed that cognitive dissonance reduction is more active for unfortunate actions than for unfortunate inactions. People engage into greater 'repair work' over regrettable actions; they actively seek to mitigate regret by considering the justifications for these actions, more so than for their regrettable inactions.

INTEGRATION

Overall, the results and conjectures we reviewed suggest different patterns of predictors for the intensity of recent, short-term regrets and for the intensity of distant, long-term regrets:

In the short term, the intensity of action regrets should be affected by the severity of the consequences—but the intensity of inaction regrets might not, because the consequences of inactions are not clear yet. Justifications, on the other hand, should affect action as well as inaction regrets, because the justifications for inaction are still clear and the special dissonance reduction efforts about actions have not yet yielded results.

In the long term, the severity of the consequences should affect the intensity of action as well as inaction regrets, because the consequences of inactions are now clear. Justifications should affect the intensity of action regrets more than they affect the intensity of inaction regrets, as the result of greater efforts at reducing dissonance, justifications might even not affect inaction regrets at all, because the reasons for inactions are now vague and less compelling.

These hypotheses derive from our synthesis of laboratory experiments, field studies and theoretical speculations. They have only received indirect or partial support so far, and were never directly tested in the form of relevant comparisons within a single study of real-life regrets. The present article is intended to bridge that gap and provide a solid empirical basis to this integrated model.

METHOD

Participants

The survey used a recruitment procedure developed in Bonnefon and Villejoubert (2006). Participants were recruited by third-year psychology students (naive about the psychology of regret), who made a list of adult men and women (excluding other psychology students) and randomly drew one male and one female participant from this list. A total of 957 participants returned a fully completed questionnaire, of whom 480 were women (mean age = 31.7, SD = 13.1); 20% had completed graduate school, 40% had an undergraduate education, 25% graduated from high school only and the educational level of the remaining 15% was lower than high school.

Material and procedure

Participants read the following introduction to the survey:

> In order to better understand what people regret in their life, we would like you to take moment to think about something you personally regret. Once you have thought of such a thing, please answer the few questions below.

DOI: 10.1002/acp

Participants were asked (a) Whether the thing they regretted happened less or more than 1 year ago, (b) Whether it was something they did, or something they failed to do, (c) How good were their reasons for doing or not doing that thing, on a 7-point scale anchored *very poor* to the left and *very good* to the right, (d) How severe were the consequences of doing or not doing that thing, on a 7-point scale from *not severe* to *very severe* and (e) To what extent they regretted this thing, on a 7-point scale from *not much* to *enormously*. The 5-item Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) was also administered to participants. The resulting score did not correlate with any other measure, and will not be considered any further in this article.

RESULTS

Of the 957 participants, 766 expressed a long-term regret (i.e. regretted something that happened more than 1 year ago), and 191 expressed a short-term regret. Long-term regrets tended to be about inactions (56%), but short-term regrets did not (48%). These two proportions are reliably different, $\chi^2 = 3.41$, $p < 0.05$, $w = 0.06$. (If not specified otherwise, p values are one-tailed for χ^2 and t-tests.)

To test our main hypotheses, we split the sample into the sub-sample of participants expressing distant regrets and the sub-sample of participants expressing recent regrets. We then performed a regression analysis in each sub-sample, with the intensity of regret as a dependent variable. The predictors that were (simultaneously) entered in both regressions were action, severity of consequences, justification and the 2-way interaction terms that are directly relevant to our hypotheses, action × consequences and action × justification. Gender and age quartile were also entered in the regressions. See Table 1 for results.

As expected, the severity of the consequences positively impacted the intensity of recent regrets, and this impact was moderated by whether the regret was about an action or a failure to act (see Figure 1). The interaction between action and consequences was a significant predictor of recent regret intensity; and the Pearson correlation between regret intensity and the severity of consequences was twice as high for actions ($r = 0.59$, $n = 99$, $p < 0.001$) as for failures to act ($r = 0.29$, $n = 92$, $p < 0.01$). Unexpectedly, justification did not reliably affect the intensity of recent regrets.

Table 1. Regression analyses of the intensity of recent ($n = 191$) and distant ($n = 766$) life regrets

	Recent regrets[a]		Distant regrets[b]	
	β	t	β	t
Action	−0.11	0.46	+0.14	1.22
Justification	−0.08	1.22	−0.22***	6.42
Consequences	+0.41***	5.95	+0.35***	10.30
Action × justification	−0.08	0.42	−0.16*	1.99
Action × consequences	+0.26*	1.69	−0.02	0.22
Age	−0.05	0.80	+0.01	0.16
Gender	+0.06	0.92	+0.10**	2.99

[a] F (7, 183) = 8.9, $p < 0.001$, $R^2 = .26$.
[b] F (7, 756) = 28.1, $p < 0.001$, $R^2 = .21$.
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

DOI: 10.1002/acp

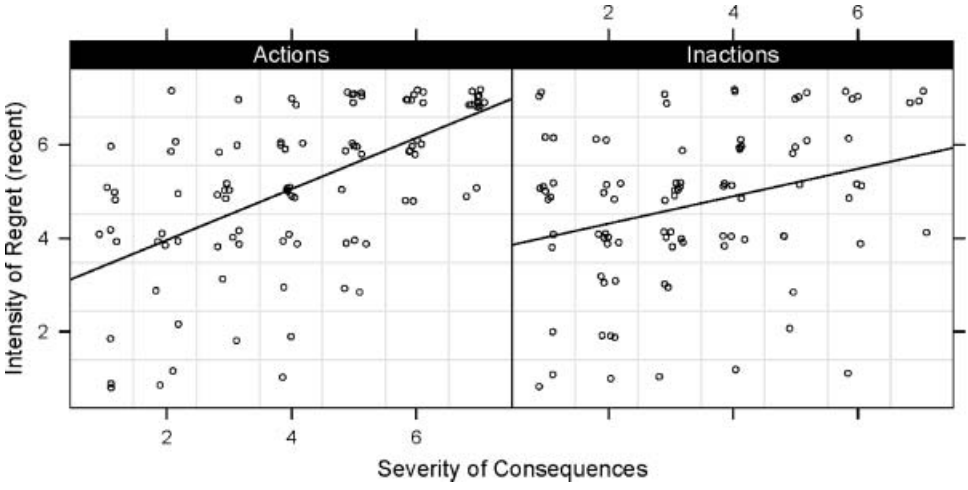

Figure 1. Scatterplots of the severity of the consequences and the intensity of regret, in the short term, for actions (left) and inactions (right)

Long-term regrets were positively affected by the severity of the consequences, and negatively affected by the quality of the justifications. As expected, the effect of justification was moderated by whether the regret was about an action or an inaction (see Figure 2). The interaction between action and justification was a significant predictor of distant regret intensity; and the Pearson correlation between regret intensity and the quality of justification was twice as high for actions ($r = -0.32$, $n = 340$, $p < 0.001$) as for failures to act ($r = -0.17$, $n = 424$, $p < 0.001$).

Age never contributed to regret intensity, but gender impacted the intensity of long-term regrets; women gave slightly larger ratings ($M = 5.16$, SD $= 1.64$) than did men ($M = 4.84$, SD $= 1.73$); $t = 2.61$, $p < 0.01$ (two-tailed), $d = 0.19$.

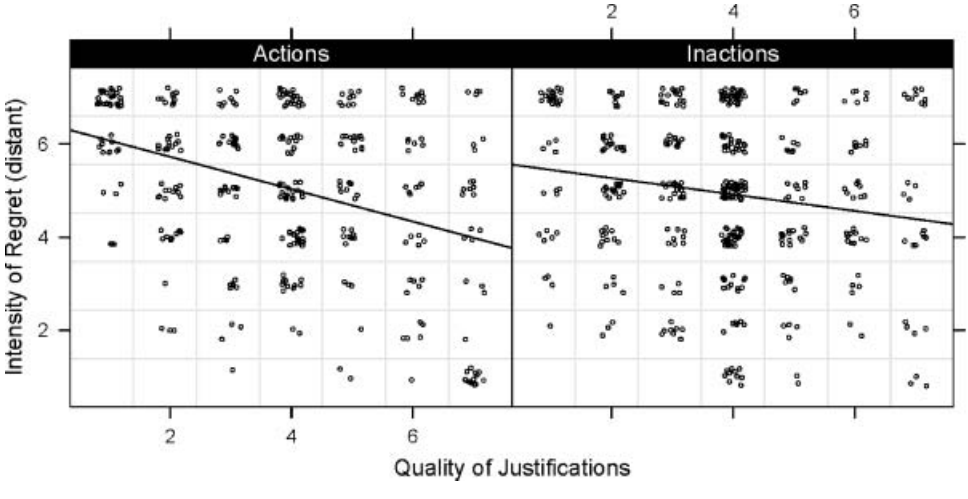

Figure 2. Scatterplots of the quality of the justifications and the intensity of regret, in the long term, for actions (left) and inactions (right)

DOI: 10.1002/acp

DISCUSSION

In this article, we consolidated several strands of regret research into an integrated model of the intensity of life regrets. More precisely, we brought together research on the effect of justifications, research about the temporal pattern of regret and commonsense assumptions about how severe consequences affect the intensity of life regrets. Altogether, these considerations led us to predict that justification and severity are the main predictors of regret intensity (both for recent and distant regrets), but that action has a different moderating effect depending on whether the regretted event took place recently or in a distant past. We hypothesised that the consequences of actions (as opposed to inactions) would have greater impact in the short term, and that the justifications for actions (as opposed to inactions) would have greater impact in the long term.

A large-scale survey of the life regrets of nearly 1000 adults lent support to all these hypotheses but one: Justifications did not significantly mitigate recent regrets. In this final section, we discuss our findings in the context of previous laboratory and field studies of regret. Beforehand, we briefly address three methodological concerns about our survey.

Methodological concerns

There is no objective answer to the question of when exactly regret turns from 'recent' to 'distant'. Our choice of a 1-year cut-off is as much arbitrary as the choices other investigators made before us. Nonetheless, previous studies usually defined 'recent' in terms of weeks rather than months. We made what we believed to be a conservative choice, which would also allow our sample not to be completely dominated by distant regrets. Indeed, even with a 1-year cut-off, only 20% of the regrets we collected qualified as recent. A lower cut-off would have made it difficult to test hypotheses about recent regrets. Note that the choice of a large cut-off is *conservative* with respect to the results of the survey, as it is likely to mitigate rather than exaggerate the structural differences between the predictors of recent and distant regrets. If some regrets that we qualified as recent are in fact borderline distant, this worked against our hypotheses, not in their favour.

We predicted two key interactions involving action: one between action and consequences in the short term, the other between action and justifications in the long term. In the two cases, we observed that the effect of justifications/consequences were greater for actions than for inactions. Alternatively to our theoretical account, these results could indicate that the intensity of action regrets is simply easier to regress on our predictors, possibly because of higher variance. However, the correlation between consequences and long-term regret intensity was comparable for actions ($r = 0.41$, $n = 340$, $p < 0.001$) and inactions ($r = 0.37$, $n = 424$, $p < 0.001$). Although it was the case that the correlation between justifications and short-term regret intensity was greater for actions ($r = -0.32$, $n = 99$, $p < 0.001$) than for inactions ($r = -0.08$, $n = 92$, $p = 0.46$), this difference is most likely the result of not factoring out the effect of consequences from the correlation, since the action $\times$ justifications interaction had no detectable short-term effect in the regression analysis that included the effect of consequences.

The question finally arises of which variety of regret was measured in our survey. Kahneman (1995) distinguished between 'hot' regret (which relates to recent events, mostly actions and is especially painful) and 'wistful' regret (which relates to distant events, mostly inactions and has a contemplative, nostalgic, almost pleasantly sad tonality). Gilovich, Medvec, and Kahneman (1998) added the 'despair' cluster (a mix of sadness and

DOI: 10.1002/acp

unfullfilment, cooler than hot regret, more painful than wistful regret and mostly related to inactions). Our measure of overall regret intensity likely reflects hot/despair emotions rather than wistful feelings. In a study of inaction regrets, Wrosch and Heckausen (2002) found that overall regret intensity clustered with hot and despair-related feelings, but was statistically unrelated to wistful emotions. If wistful emotions did not reflect the overall intensity of inaction regrets, they are even less likely (by definition) to reflect the overall intensity of action regrets. Thus, it is plausible that what we have identified as the predictors of regret intensity are, more accurately, the predictors of hot and despair-related regret intensity.

Life regrets and the quality of justifications

Extrapolating from the (mostly) vignette-based finding that well-justified decisions evoke regrets of lesser intensity, we expected that justifications would generally mitigate the intensity of life regrets. Good justifications did impact the intensity of long-term regrets, and to an even greater extent when these regrets concerned actions. This key interaction supports the conjectures that greater efforts at dissonance reduction are expanded in the case of actions, to greater effects and/or that the relevance of justifications for inaction tend to fade away with time.

This result brings a new perspective on an important assumption of decision justification theory (DJT; Connolly & Zeelenberg, 2002). DJT decomposes regret into an outcome component (based on the comparison of what is to what could have been) and a process component (based on the perceived quality of the decision process that led to the outcome). Importantly, DJT does not give any role to action *per se*; rather, it assumes that justification trumps action. In a direct test of that prediction, Inman and Zeelenberg (2002) presented participants with scenarios where consumers either made repeated purchases or switched products, always to poor results. When justification for the decision was manipulated orthogonally to the nature of the decision (action or inaction, in that case switch or stay), participants' responses were no longer affected by action, but only by justification.

Our results suggest that the relation between action and justification can be more complex, at least in the case of long-term life regrets. It appears that, with the passing of time, justifications weight heavier on action regrets than on inaction regrets. In other words, justification cannot entirely trump action, and process regret is subtly influenced, in the long term, by the original nature of the decision.

Surprisingly (and in spite of large statistical power) our data do not show any short-term effect of justifications, although this effect was regularly obtained in vignette studies. This discrepancy between our study (that relies on real-life experiences) and previous studies using fictitious material echoes the findings of Gilbert, Morewedge, Risen, and Wilson (2004) on near miss regrets, as well as the findings of Girotto, Ferrante, Pighin, and Gonzalez (Girotto, Ferrante, Pighin, & Gonzalez, 2007) on counterfactual thinking. Both articles highlighted the different results that can be obtained as a function of whether participants have experienced a situation themselves, or are simply presented with a story describing that situation.

We are tempted to consider that participants in vignette studies underestimate the time it takes for justification to mitigate regret. Kahneman (1995) and Seta et al. (2001) suggested distinguishing two varieties of counterfactual thinking: an automatic, immediate variety and a slow, effortful variety. It seems plausible that the processing of justifications, and their effect on regret, relies on the slow form of counterfactual thinking, rather than on the

DOI: 10.1002/acp

automatic form. Nonetheless, when participants are asked to rate the regret felt by a character in a vignette, they may immediately factor in the justification this character had for her decision—oblivious to the fact that, in real life, dissonance reduction requires time and effort (although see Gilbert et al., 2004, for an opposite perspective).

Life regrets and the severity of consequences

It is only commonsense that the severity of the consequences resulting from a decision should increase regret—which is probably the reason why so few studies investigated this link. Jokisaari (2003) recorded the severity of consequences in a study of life regrets, and showed that it impacted satisfaction with life and physical symptoms, but did not measure the intensity of regret *per se*. Zhang et al. (2005) manipulated the magnitude of financial losses resulting from a decision (in a vignette study), and showed that it impacted judgments of regret in a within-subject design but not necessarily in a between-subject design.

The present study unambiguously confirms that severity of consequences affect the intensity of life regrets. The effect of severity was very strong all across the board, for recent as well as distant regrets, for action as well as inaction regrets. However, our results suggest that the effect of severity on regret intensity is not as trivial as expected. In particular, in the case of short-term regret, we detected a key interaction between severity and regret type (action vs. inaction). In the short term, the severity of consequences has a greater impact on action regrets than on inaction regrets.

This key interaction supports the conjecture that the consequences of actions are readily perceivable, even in the short term, whereas the consequences of inactions might take a longer time to appear clearly. As a result, the perceived consequences of inactions have a smaller impact in the short term, but get even with the perceived consequences of actions in the long term.

We have not considered so far the possibility that individual differences may alter the patterns of interaction we observed in this research. An interesting possibility is suggested by the findings of Feeney et al. (2005), who observed that high self-esteem individuals have a strong propensity to inaction regrets, both in the short term and in the long term. Feeney et al. (2005) suggest that this propensity is due to the self-enhancing nature of inaction regrets, which can carry the implicit claim that the failure to act was the only obstacle to the attainment of a desirable outcome; for example, a literate person with high self-esteem might regret not having taken time to write fiction, with the implicit claim that had she done so, she would certainly have written the next Great American Novel. This suggests that high self-esteem individuals may have a more acute (if not accurate) vision of the consequences of their inactions, even in the short term. If so, we may expect the perceived severity of consequences to affect their inaction regrets to the same extent than their action regrets, even in the short term. That is, we may expect this subpopulation not to exhibit the key Severity $\times$ Action interaction that we observed in the case of short-term regrets.

The psychology of regret is a largely fragmented field, arguably as a reflection of the complexity of this very subtle emotion. Vignette studies and field surveys sometimes yield contradictory results; key conjectures are sometimes left untested (e.g. the justifications for inactions fade away with time), commonsense assumptions are sometimes unduly treated as axiomatic (e.g. the severity of consequences straightforwardly impacts regret intensity). In this article, we have organised laboratory results, field findings, untested conjectures and commonsense assumptions in an integrated model of the intensity of life regrets. The

DOI: 10.1002/acp

results of our large-scale survey encourage us to believe that, however complex, the issue of real-life regret intensity can be tamed to some extent. We hope that our model and results can be a milestone in this achievement.

ACKNOWLEDGEMENTS

This research was supported by the international cooperation programme of the French General Consulate in Shanghai. We thank Éric Raufaste and Gaëlle Villejoubert for their thoughtful comments.

REFERENCES

Avni-Babad, D. (2003). Action/inaction regret as a function of severity of loss. *Applied Cognitive Psychology*, *17*, 225–235.

Berndsen, M., van der Plight, J., Doosje, B., & Manstead, A. S. R. (2004). Guilt and regret: The determining role of interpersonal and intrapersonal harm. *Cognition and Emotion*, *18*, 55–70.

Bonnefon, J. F., & Villejoubert, G. (2006). Tactful, or doubtful? Expectations of politeness explain the severity bias in the interpretation of probability phrases. *Psychological Science*, *17*, 747–751.

Brehaut, J. C., O'Connor, A. M., Wood, T. J., Hack, T. F., Siminoff, L., Gordon, E., et al. (2003). Validation of a decision regret scale. *Medical Decision Making*, *23*, 281–292.

Byrne, R. M. J., & McEleney, A. (2000). Counterfactual thinking about actions and failures to act. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *26*, 1318–1331.

Connolly, T., & Reb, J. (2005). Regret in cancer-related decisions. *Health Psychology*, *24*, S29–S34.

Connolly, T., & Zeelenberg, M. (2002). Regret in decision making. *Current Directions in Psychological Science*, *11*, 212–216.

Crawford, M. T., McConnell, A. R., Lewis, A. C., & Sherman, S. J. (2002). Reactance, compliance, and anticipated regret. *Journal of Experimental Social Psychology*, *38*, 56–63.

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, *49*, 71–76.

Feeney, A., & Handley, S. J. (2006). Comparisons, mental models, and the action effect in judgements of regret. *Memory and Cognition*, *34*, 1422–1430.

Feeney, A., Gardiner, D. R., Johnston, K., Jones, E., & McEvoy, R. J. (2005). Is regret for inaction relatively self-enhancing? *Applied Cognitive Psychology*, *19*, 761–777.

Gilbert, D. T., Morewedge, C. K., Risen, J. L., & Wilson, T. D. (2004). Looking forward to looking backward: The misprediction of regret. *Psychological Science*, *15*, 346–350.

Gilovich, T., Kerr, M., & Medvec, V. H. (1993). Effect of temporal perspective on subjective confidence. *Journal of Personality and Social Psychology*, *64*, 552–560.

Gilovich, T., & Medvec, V. H. (1994). The temporal pattern to the experience of regret. *Journal of Personality and Social Psychology*, *67*, 357–365.

Gilovich, T., & Medvec, V. H. (1995). The experience of regret: What, when and why. *Psychological Review*, *102*, 379–395.

Gilovich, T., Medvec, V. H., & Chen, S. (1995). Omission, commission, and dissonance reduction: Overcoming regret in the Monty Hall problem. *Personality and Social Psychology Bulletin*, *16*, 284–295.

Gilovich, T., Medvec, V. H., & Kahneman, D. (1998). Varieties of regret: A debate and partial resolution. *Psychological Review*, *105*, 602–605.

Gilovich, T., Wang, R. F., Regan, D., & Nishina, S. (2003). Regrets of action and inaction across cultures. *Journal of Cross-Cultural Psychology*, *34*, 61–71.

Girotto, V., Ferrante, D., Pighin, S., & Gonzalez, M. (2007). Post-decisional counterfactuals by actors and readers. *Psychological Science*, *18*, 510–515.

DOI: 10.1002/acp

Gleicher, F., Kost, K. A., Baker, S. M., Strathman, A. J., Richman, S. A., & Sherman, S. J. (1990). The role of counterfactual thinking in judgments of affect. *Personality and Social Psychology Bulletin*, *16*, 284–295.

Hattiagandi, N., Medvec, V. H., & Gilovich, T. (1995). Failing to act: Regrets of Terman's geniuses. *International Journal of Human Development*, *40*, 175–185.

Inman, J. J., & Zeelenberg, M. (2002). Repeat versus switch decisions: The attenuation role of decision justifiability. *Journal of Consumer Research*, *29*, 116–128.

Jokisaari, M. (2003). Regret appraisals, age, and subjective well-being. *Journal of Research in Personality*, *37*, 487–503.

Kahneman, D. (1995). Varieties of counterfactual thinking. In N. J. Roese, & J. M. Olsen (Eds.), *What might have been: The social psychology of counterfactual thinking* (pp. 375–396). Mahwah, NJ: Erlbaum.

Kahneman, D., & Miller, D. T. (1986). Norm theory: Comparing reality to its alternatives. *Psychological Review*, *93*, 136–153.

Kahneman, D., & Tversky, A. (1982). The simulation heuristic. In D. Kahneman, P. Slovic, & A. Tversky (Eds.), *Judgment under uncertainty: Heuristics and biases* (pp. 201–210). Cambridge, UK: Cambridge University Press.

Landman, J. (1987). Regret and elation following action and inaction: Affective responses to positive versus negative outcomes. *Personality and Social Psychology Bulletin*, *13*, 524–536.

Pieters, R., & Zeelenberg, M. (2005). On bad decisions and deciding badly: When intention-behavior inconsistency is regrettable. *Organizational Behavior and Human Decision Processes*, *97*, 18–30.

Rajagopal, P., Raju, S., & Unnava, H. R. (2006). Differences in the cognitive accessibility of action and inaction regrets. *Journal of Experimental Social Psychology*, *42*, 302–313.

Roese, N. J., & Summerville, A. (2005). What we regret most . . . and why. *Personality and Social Psychology Bulletin*, *31*, 1273–1285.

Savitsky, K., Medvec, V. H., & Gilovich, T. (1997). Remembering and regretting: The Zeigarnik effect and the cognitive availability of regrettable actions and inactions. *Personality and Social Psychology Bulletin*, *23*, 248–257.

Seta, J. J., McElroy, T., & Seta, C. E. (2001). To do or not to do: Desirability and consistency mediate judgments of regret. *Journal of Personality and Social Psychology*, *80*, 861–870.

Stewart, A. J., & Vandewater, E. A. (1999). ''If I had it to do over again . . . '': Midlife review, midcourse corrections, and women's well-being in midlife. *Journal of Personality and Social Psychology*, *76*, 270–283.

Timmer, E., Westerhof, G., & Dittmann-Kohli, F. (2005). ''When looking back on my past life I regret . . . '': Retrospective regret in the second half of life. *Death Studies*, *29*, 625–644.

Wrosch, C., & Heckausen, J. (2002). Perceived control of life regrets: Good for young and bad for old adults. *Psychology and Aging*, *17*, 340–350.

Zeelenberg, M., van den Bos, K., van Dijk, W. W., & Pieters, R. (2002). The inaction effect in the psychology of regret. *Journal of Personality and Social Psychology*, *82*, 314–327.

Zhang, J., Walsh, C., & Bonnefon, J. F. (2005). Between-subject or within-subject measures of regret: Dilemma and solution. *Journal of Experimental Social Psychology*, *41*, 559–566.

DOI: 10.1002/acp