



FlashReport

Hot as hell! The self-conscious nature of action regrets[☆]Gayannée Kedia^{a,*}, Denis J. Hilton^b^a University of Cologne, Cologne, Germany^b University of Toulouse, Toulouse, France

ARTICLE INFO

Article history:

Received 12 April 2010

Revised 5 October 2010

Available online 13 November 2010

Keywords:

Self-conscious emotions

Regret

Responsibility

Moral

ABSTRACT

Gilovich, Medvec, and Kahneman (1998) have shown that real-life regrets for actions and inactions correspond to different emotional states. When people regret something they have done they experience painful “hot” emotions such as disgust or guilt, whereas when the regret is about a failure to act they rather experience wistful emotions. In four questionnaire studies, we have tested the hypothesis that regrettable actions elicit a particular subcategory of these hot emotions: the self-conscious emotions (i.e., guilt, shame, embarrassment, remorse, and anger toward oneself). These studies used different methodologies and all converged to show that self-conscious emotions were the only hot emotions to be systematically greater for action regrets than for inaction regrets. A similar pattern was observed for judgments of responsibility and morality. We emphasize the theoretical and methodological implications of these results in the discussion.

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Regret is the second most frequently named emotion in everyday conversation (Shimanoff, 1984). It covers a wide range of emotional experiences going from a slight lump in one's throat for the missed opportunity to learn violin as a child to excoriating self-recrimination following severe transgressions. The nature of this experience depends on whether the regret followed a commission or a failure to act. Gilovich, Medvec, and Kahneman (1998) have found that regretted actions elicit painful “hot” emotions whereas regretted inactions are more likely to give rise to feelings of wistfulness. Action and inaction regrets would thus be two different emotions “which although quite distinct, confusingly share the same name in the vernacular” (Gilovich et al., 1998, p. 602).

What are precisely these hot feelings that come with action regrets? Gilovich et al. (1998) included in this category guilt, shame, embarrassment, anger, disgust, frustration, and irritation. They computed composite scores and showed that globally these emotions are experienced more intensely for action than inaction regrets. However, they did not report any data for the particular emotions investigated. The present article seeks to complement their research by advancing that regrettable actions elicit a specific subcategory of these hot emotions: the self-conscious emotions. These aversive feelings, such as guilt, shame, embarrassment, or remorse, are the consequence of negatively evaluating one's own character or

behaviour. They are often elicited by actual or anticipated moral transgressions and play a crucial role in relationships by motivating apologies for misconduct and reparative actions (Tangney, Stuewig, & Mashek, 2007). Regret, guilt, shame, and remorse are closely related emotional terms that people identify as a cluster (Storm & Storm, 1987). Scholars have defined regret in relation to self-conscious emotions (Landman, 1993) or self-conscious emotions in relation to regret (Kugler & Jones, 1992). These theoretical classifications, however, have only led to few empirical studies of the perceived relations between these emotions (for exceptions, see Berndsen, van der Pligt, Doosje, & Manstead, 2004; Saffrey, Summerville, & Roese, 2008; Zeelenberg & Breugelmans, 2008).

Experiences of regret and self-conscious emotions are likely to co-occur. Both derive from internal attributions and are increased when one feels responsible for the negative outcome. Both are amplified when imagining that things could have been different if only one had decided differently and constitute efficacious motivators to undo the undesirable outcome (for reviews, see Tangney & Dearing, 2002; Zeelenberg & Pieters, 2007). These commonalities are more important for action regrets. Actions that turned out badly lead to greater internal attributions, perceived responsibility, self-focused counterfactual thinking, and reparative actions than missed opportunities to act (Byrne & McEleney, 1997; Kahneman & Miller, 1986; Zeelenberg, van der Pligt, & Manstead, 1998; Zeelenberg, van Dijk, & Manstead, 2000).

On the contrary, the other hot emotions described by Gilovich et al. (1998), i.e., anger, frustration, irritation, and disgust, do not seem to be specifically linked to regret. They are not classified by people in the same category of emotional terms as regret but are rather included in the broad family of anger (Storm & Storm, 1987). Rather than being self-evaluative, these non-self-conscious-hot emotions arise from

[☆] The research was supported by a grant from the ‘ACI Neurosciences intégratives et computationnelles’ program funded by the French Ministry of Research. Many thanks to Thomas Mussweiler for his helpful suggestions.

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external attributions (Roseman, Spindel, & Jose, 1990) and are associated with action tendencies like attacking or rejecting someone (Roseman, Wiest, & Swartz, 1994).

The present series of experiments builds on Gilovich et al.'s (1998) research. We hypothesized that self-conscious emotions are the only hot emotions more linked to regrets for action than to regrets for inactions.

Study 1

Participants

Study 1a. Participants were 162 volunteers, who were either students at the University of Toulouse (France) or older persons from a Center for Continuing Education.

Study 1b. One hundred and forty-nine students at the University of Toulouse completed the questionnaire during class.

Study 1c. One hundred and forty-one students at the University of Cologne (Germany) completed the questionnaire during class.

Methods

Study 1a was the strict replication of Gilovich et al.'s (1998) first study, including a few supplementary items. The design included one within-subject factor, i.e., the type of regret recalled (inaction vs. action regrets), and one between-subjects factor, i.e., time perspective (short-term vs. long-term regrets). Half of the participants were asked to think of their biggest regret for an action and an inaction from the past week and the other half were asked to do the same for the biggest regrets over their entire lives. Participants had then to evaluate on scales ranging from 1 (*not at all*) to 3 (*very much*) how much they experienced four self-conscious-hot emotions (guilt, shame, embarrassment, and remorse), four non-self-conscious-hot emotions (anger, disgust, frustration, and irritation), four wistful emotions (contemplation, wistfulness, nostalgia, and sentimentality) along with 10 filler emotions (for results concerning the wistful and filler emotions, see Supplementary Material). Participants also evaluated the extent to which they believed they had transgressed a moral norm, they felt responsible, they attributed the event to external causes and internal causes, and considered that the situation was controllable.

Study 1b replicated Study 1a using seven-point scales. Participants were also asked to indicate the intensity of their regrets but did not have here to report external and internal attributions or controllability judgements.

Study 1c replicated Study 1b, except that the type of regret recalled was operationalized as a between-subject factor and time perspective as a within-subjects factor. In line with Kahneman's (1995) definition of hot regret as a desire to "kick oneself", in this study we distinguished anger toward someone else from anger toward oneself.¹

Results and discussion

Results are displayed in Table 1. In accordance with Gilovich et al.'s (1998) results, studies 1a, 1b, and 1c showed higher levels of hot emotions for action than inaction regrets. Moreover, the three studies

Table 1
Means and statistical values for emotional and cognitive variables in Study 1.

	Means		Statistical values	
	Action regret	Inaction regret	$F(1, 160)$ $F(1, 147)$ $F(1, 139)$	η^2
Hot emotions	0.82 (0.42) 4.01 (1.27) 3.81 (0.11)	0.73 (0.42) 3.59 (1.35) 3.15 (0.10)	5.10* 14.91** 18.90**	.03 .09 .12
Self-conscious-hot emotions				
Guilt	1.03 (0.74) 5.14 (1.86) 4.25 (0.20)	0.85 (0.78) 4.01 (2.22) 3.40 (0.19)	5.91* 27.90** 9.29**	.04 .16 .06
Shame	0.79 (0.78) 3.87 (2.37) 3.52 (0.20)	0.48 (0.68) 2.72 (2.16) 2.68 (0.19)	20.06** 30.70** 9.25**	.11 .17 .06
Embarrassment	0.94 (0.71) 4.09 (2.26) 3.14 (0.18)	0.70 (0.68) 3.25 (2.18) 2.62 (0.17)	13.29** 13.16** 4.46*	.08 .08 .03
Remorse	0.99 (0.79) 5.20 (1.77) 4.88 (0.18)	0.79 (0.74) 4.81 (2.12) 3.86 (0.17)	6.74** 5.58* 16.54**	.04 .04 .11
Self-anger	– – 5.05 (0.18)	– – 4.45 (0.16)	– – 6.38*	– – .04
Non-self-conscious-hot emotions				
Anger ^a	0.77 (0.75) 4.17 (2.15) 3.36 (0.20)	0.81 (0.80) 4.03 (2.18) 2.83 (0.18)	0.40 0.50 3.85	.00 .00 .03
Disgust	0.62 (0.74) 3.04 (2.34) 1.93 (0.15)	0.53 (0.72) 2.61 (2.07) 1.54 (0.14)	1.81 4.07* 3.55	.01 .03 .03
Frustration	0.73 (0.79) 3.17 (2.07) 4.50 (0.17)	0.96 (0.76) 3.99 (2.11) 4.13 (0.16)	9.76** 13.66** 2.56	.06 .09 .02
Irritation	0.67 (0.73) 3.41 (2.08) 3.69 (0.20)	0.73 (0.76) 3.30 (2.21) 2.82 (0.18)	1.29 0.32 10.71**	.01 .00 .07
Cognitive variables				
(lm)morality	0.51 (0.72) 3.15 (2.31) 2.68 (0.19)	0.21 (0.48) 1.73 (1.48) 1.81 (0.17)	19.51** 52.14** 11.86**	.11 .26 .08
Responsibility	1.39 (0.67) 5.28 (1.57) 5.34 (0.16)	1.15 (0.77) 4.59 (1.75) 4.70 (0.15)	9.11** 14.97** 8.87**	.05 .09 .06
Controllability	0.91 (0.75) – –	0.83 (0.79) – –	1.35 – –	.01 – –
Internal attribution	1.23 (0.75) – –	1.06 (0.81) – –	3.83 – –	.02 – –
External attribution	1.26 (0.68) – –	1.30 (0.70) – –	0.23 – –	.00 – –
Regret	– 5.00 (1.59) 5.07 (0.14)	– 5.09 (1.46) 5.01 (0.13)	– 0.32 0.09	– .00 .00

Note. First row corresponds to Study 1a, second row to Study 1b, and third row to Study 1c. For Study 1a and Study 1b, the values between brackets indicate standard deviations. For Study 1c, the means correspond to marginal estimated means and the values between brackets indicate the standard error of the means.

* $p < .05$; ** $p < .01$.

^a In Study 1c, we have made a distinction between anger toward oneself and anger toward someone else.

¹ The distinction between self-directed and other-directed anger in psychology experiments is recent. Thus the affiliation of self-anger to a certain family of emotions has not yet been tackled and the self-conscious emotions do not classically encompass self-anger. There is evidence, though, that self-anger possesses characteristic features of the self-conscious emotions. It derives from a negative self-evaluation and is accompanied, in similar proportions as shame and guilt, by the feeling of "being wrong" and "being inferior" (Ellsworth & Tong, 2006). Therefore, in the rest of this article self-anger is included in the self-conscious emotion family.

consistently indicated that this effect was driven by the self-conscious emotions. As hypothesized, guilt, shame, embarrassment, remorse, and self-anger were each systematically more endorsed in the action regret condition than in the inaction regret condition. A similar pattern was found for their cognitive antecedents: When regretting an action, participants experienced more responsibility for the negative event and considered their behaviour as more immoral than when regretting an inaction. Conversely, as predicted, none of

the non-self-conscious-hot emotions exhibited higher scores for action than inaction regrets, except disgust in Study 1b and irritation in Study 1c. These action effects on disgust and irritation were, however, not consistent across the three experiments. Frustration was significantly greater for inaction than action regrets in both Study 1a and Study 1b.

The association between action regret and self-conscious emotions was confirmed by a factorial analysis performed on Study 1b data. The eight hot emotions along with regret ratings were entered in a principal axis analysis with a promax rotation. The analysis was run separately in the action and inaction regret conditions. A criterion of .30 was used for factor loadings. Both scree tests revealed that the data were best described by two factors. In both analyses, one factor gathered the self-conscious-hot emotions, i.e., guilt, shame, embarrassment, and remorse, whereas the other one encompassed the non-self-conscious-hot emotions, i.e., anger, irritation, frustration, and disgust (see Table 2). In line with our hypothesis, in the action condition, regret loaded on the self-conscious-emotion factor, whereas in the inaction condition, regret loaded on the non-self-conscious-hot-emotion factor.

Hence, not only are self-conscious emotions more intense following regrettable actions than failures to act, but also the correlation between their intensity and that of regret leads them to be identified as a single factor in the action regret condition, and in this condition only.

Study 2

Participants

Seventy-seven students at the University of Toulouse completed the questionnaire during class.

Methods

This study was a replication of Gilovich et al.'s (1998) Study 3, to which slight refinements were made. Participants were asked to recall regrets for both an action and an inaction and to compare them. They had to indicate whether the action regret, the inaction regret, both regrets equally, or neither one nor the other made them experience five self-conscious emotions (guilt, shame, remorse, embarrassment, and self-anger), four non-self-conscious-hot emotions (other-anger, irritation, frustration, and disgust), four wistful emotions (dreamy, wistfulness, nostalgia, and sentimentality), 11 filler emotions, and regret.

Table 2

Results of the principal axis analyses of the hot emotions ratings in the two experimental conditions ($N = 149$, Study 1b).

Percentage of explained variance	Action regret condition		Inaction regret condition	
	Factor A	Factor B	Factor A	Factor B
	37.03%	18.18%	17.18%	40.78%
Regret	.41			.61
Guilt	.72		.64	
Remorse	.55		.45	
Shame	.75		.81	
Embarrassment	.62		.65	
Anger		.81		.82
Frustration		.42		.61
Irritation		.77		.78
Disgust	.32	.48		.51

Note. A criterion of .30 was used for factor loadings.

Table 3

Percentages of responses associated with each response category (Study 2).

	Action regret	Inaction regret	Both regrets	Neither one nor the other
Which regret made you more strongly feel:				
Self-conscious-hot emotions	41.27%	18.52%	21.96%	18.25%
Remorse	36.00%	22.67%	34.67%	6.67%
Guilt	42.86%	16.88%	27.27%	12.99%
Embarrassment	38.16%	17.11%	10.53%	34.21%
Shame	48.05%	16.88%	6.49%	28.57%
Self-anger	41.10%	19.18%	31.51%	8.22%
Non-self-conscious-hot emotions	29.32%	24.76%	11.07%	34.85%
Other-anger	32.89%	21.05%	6.58%	39.47%
Irritation	32.47%	16.88%	11.69%	38.96%
Frustration	15.58%	46.75%	16.88%	20.78%
Disgust	36.36%	14.29%	9.09%	40.26%
Which regret was the most painful	42.86%	33.77%	14.29%	9.09%

Note. Bold values represent the highest percentage for a given emotion.

Results and discussion

For a majority of participants, remorse, guilt, shame, embarrassment, and self-anger were more associated with the regretted action than with any of the other response categories (see Table 3). Chi-square analyses indicated that guilt, shame, embarrassment, and self-anger were significantly more frequently associated with action regrets than inaction regrets ($\chi^2(1, N \geq 42) > 5.82, p < .02$; for precise statistical values see Supplementary Table 1). Regarding remorse, the difference in frequency between the action and inaction regret categories was in the expected direction but not significant ($\chi^2(1, 44) = 2.27, p = .13$). On the contrary, none of the non-self-conscious-hot emotions was primarily associated with action regrets. The first category to which the non-self-conscious-hot emotions were associated was *neither regret for action, nor regret for inaction* (not significantly different from the action category, *Wilcoxon* $z = 0.93, p = .35$), confirming the hypothesis that non-self-conscious-hot emotions are not representative of action regrets in phenomenological experience. We find it interesting that in this experiment, just as in studies 1a and 1b, frustration was more associated with inaction than action regrets. This suggests that regretted failures to act trigger a broader range of emotional experiences than only wistfulness. This result also confirms Gilovich and Medvec's hypothesis that inaction regrets are not only "pleasantly sad" (Gilovich et al., 1998, p. 604) but sometimes come with feelings of helplessness.

Finally, a greater percentage of participants judged their action regrets as more painful than their inaction regrets, but this effect did not reach significance ($\chi^2(1, 59) = 0.83, p = .36$).

General discussion

Gilovich et al. (1998) have shown that different emotions are gathered under the term regret. What differentiates these regrets is not their intensity but the nature of the feelings that accompany them: Regrets for actions give rise to hot emotions, whereas regrets for inactions tend to elicit wistfulness. Yet, the concept of hot emotions remained to be specified and the question arose whether each of the hot emotions investigated by Gilovich et al. was associated with action regrets.

In the present article, we argue that action regrets only come with a subset of these hot emotions: the self-conscious emotions. In four studies, we found that regrettable actions elicit more guilt, remorse, embarrassment, shame, and self-anger than regrettable failures to act and are perceived as more immoral and associated with more responsibility. Self-conscious emotions are important components of the experience of action regret. In Study 2, more than 70% of the participants indicated that their regretted action elicited guilt,

remorse, or self-anger and 50% of the participants reported having experienced shame or embarrassment.² Conversely, none of the other hot emotions (other-anger, irritation, frustration, and disgust) was systematically greater for action regrets and participants reported that neither their regrets for action nor their regrets for inaction made them experience these emotions.

The strong overlap between the experience of action regrets and the experience of the self-conscious emotion family as a whole has conceptual implications. So far self-conscious emotions and regret have been mainly studied as independent research topics. On the one hand, self-conscious emotion experts have worked at identifying the differences and common features between guilt, shame, and embarrassment and their respective influence on social behaviour, without paying much attention to regret (Tangney & Fischer, 1995). On the other hand, judgement theorists and economists have investigated how action and inaction regret intensity varies with time and circumstances, as well as the impact of regret on self-interested decision-making (Gilovich & Medvec, 1995). However, research on regret has generally stood apart from research on other emotions. Yet, in real-life, action regrets and the self-conscious emotions seem to co-occur so frequently that it is impossible to ignore their closeness. Like members of the same family, they share characteristics and, at the same time, have their own specificity. For example, action regret has in common with guilt to stem from a negative evaluation focused on specific behaviours (“I did that bad thing”; whereas for shame the whole self is judged: “I did that bad thing”; Niedenthal, Tangney, & Gavanski, 1994). However, both emotions also differ with respect to the kind of outcome that elicits them: Regret is experienced when one feels responsible for a harm done either to oneself or to someone else whereas guilt only occurs in interpersonal situations (Zeelenberg & Breugelmans, 2008).

On the methodological level, it is important to keep in mind that regretting one's actions is likely to activate the whole self-conscious emotion family as background hues and that self-conscious emotions are important covariates to take into consideration in the study of regret. Asking someone to recall regretted actions—a method frequently used to study regret (e.g., Feeney, Gardiner, Johnston, Jones, & McEvoy, 2005; Gilovich & Medvec, 1994; Zeelenberg, van Dijk, et al., 1998)—clearly elicits in parallel guilt, shame, remorse, self-anger, and embarrassment. Other methods aimed at inducing regret could exhibit similar effects. Even scenarios that at first sight look strictly regret-specific—e.g., buying a stock which value declines shortly after—may actually trigger self-conscious emotions if participants put the event into a social context. A loss of money can generate guilt if one thinks about the detrimental consequences it will have on one's family or embarrassment for looking a fool in front of one's colleagues. Self-conscious emotions may thus explain some of the differences observed in previous studies between action and inaction regrets. Zeelenberg, van der Pligt, et al. (1998) have, for example, found that, in relationships, people are more likely to undo regrets stemming from actions than inactions by apologizing. Based on the present results, one can rightfully wonder whether regretted actions lead to more apologies because they elicit more intense guilt, shame, and embarrassment.

The association between action regrets and the self-conscious emotions reminds us that humans care about others and that the actions they regret most are often caused by problematic social interactions. “Hell is other people” (Sartre, 1947/1997 p. 93) and it is others people who make our regrets as hot as hell.

Supplementary data to this article can be found online at doi:10.1016/j.jesp.2010.10.017.

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² These results correspond to the sum of the action regret and both regrets equally categories.