REPETITIVE REGRET, DEPRESSION, AND ANXIETY: FINDINGS FROM A NATIONALLY REPRESENTATIVE SURVEY

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Past research has established a connection between regret (negative emotions connected to cognitions about how past actions might have achieved better outcomes) and both depression and anxiety. In the present research, the relations between regret, repetitive thought, depression, and anxiety were examined in a nationally representative telephone survey. Although both regret and repetitive thought were associated with general distress, only regret was associated with anhedonic depression and anxious arousal. Further, the interaction between regret and repetitive thought (i.e., repetitive regret) was highly predictive of general distress but not of anhedonic depression nor anxious arousal. These relations were strikingly consistent across demographic variables such as sex, race/ethnicity, age, education, and income.

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"If only I had told her I love her!" The aching remorse of actions left undone, of better possibilities left unattained, is a universal emotion. Regret may be defined as a negative emotion colored by the inference that a personal action might have brought about a different, more desirable outcome (i.e., a counterfactual inference). A growing body of research has demonstrated regret to be a pivotal psychological construct, of relevance to decisions, coping, and learning (Inman, Dyer, & Jia, 1997; Zeelenberg & Pieters, 2007). Recent evidence has linked regret to depression and anxiety. However, repetitive thought (defined as chronic, repeated thinking about a particular object) has also been linked to depression and anxiety. Because regret may overlap with repetitive thought (people may focus repeatedly on a particular regret), a key question centers on the extent to which regret versus repetitive thought contribute independently or interactively to depression and anxiety. We examined this question in a nationally representative telephone survey, which yielded the first portrait of how the typical American experiences life regrets.

Regret is often conceptualized in terms of two components, a negative affective state and a counterfactual inference that involves self-blame (Connolly & Zeelenberg, 2002; Landman, 1993). In other words, the cognitive construction of an alternative decision (I should have taken the shortcut) or life pathway (I could have been a contender) suggests some degree of fault: one should have known better and acted to have achieved a better outcome (Roese, 1997). Although this definition of regret emphasizes its negative side, recent research has demonstrated that its psychological consequences may involve benefit as well as harm.

One benefit is that regret can help to gain insight and improve performance. Regret signals a need for corrective action and pushes people into implementing those actions. In this sense, regret is often a normal component of learning from experience (Galinsky, Seiden, Kim, & Medvec, 2002; Roese, 1997; Zeelenberg, 1999; Zeelenberg & Pieters, 1999), and is particularly likely to be felt when the individual recognizes opportunities for corrective action (Roese & Summerville, 2005). Moreover, the experience of regret has been linked to activation in the orbitofrontal cortex (Camille et al., 2004; Coricelli et al., 2006; Ursu & Carter, 2005), a brain region involved in learning, deciding, and planning; e.g., Bechara, Damasio, & Danasio, 2000; Beer, Knight, & D'Esposito, 2006). From this perspective, then, regret has beneficial consequences.

The more traditional view of regret, however, is that it brings negative consequences. Regret has been conceptualized as a form of

bias in decision-making, resulting in suboptimal choices (Connolly & Zeelenberg, 2002; Inman, Dyer, & Jia, 1997; Roese, 1999). Most important for the present research, regret has been linked to mental health outcomes such as depression and anxiety. For example, Monroe, Skowronski, MacDonald, & Wood, (2005) assessed regret in the context of a mock job hiring task, in terms of the extent to which individuals expressed regret after learning that a better candidate might have been hired instead of the one they themselves recommended. Mildly depressed participants reported stronger regret than nondepressed participants, and this effect was independent of the personal relevance of the decision and the actual differences in the quality of the candidates (see also Markman & Weary, 1996; Markman & Miller, 2006). Kocovski, Endler, Rector, & Flett (2005) found that counterfactual thinking (which, as we have noted, is the cognitive underpinning of regret) was related to social anxiety (see also Leithy, Brown, & Robbins, 2006).

One aspect that may distinguish between beneficial versus problematic regret is whether regrets are repetitive. Repetitive thought is a broad and widely used construct in psychology that refers to "the process of thinking attentively, repetitively, or frequently about one's self and one's social world" (Segerstrom, Stanton, Alden, & Craske, 2003, p. 909; see Watkins, 2008, for review).[1] Generally speaking, repetitive thought that focuses on negative ideation is associated both with depression and anxiety (e.g., Ciesla & Roberts, 2007; Cox, Enns, & Taylor, 2001; Nolen-Hoeksema, 2000; Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008; Segerstrom, Tsao, Alden, & Craske, 2000). How might regret be related to repetitive thought? We conceptualize them as distinct but overlapping constructs. Accordingly, there may be (1) regret that is not repetitive (e.g., a momentary pang of regret over ordering coffee instead of tea), (2) repetitive thought that contains no regret (i.e., no consideration of counterfactual alternatives, as when mentally replaying the factual aspects of one's honeymoon), and (3) *repetitive regret*, which involves the same regrets repeatedly coming to mind (e.g., wishing over and over to have married one's high school sweetheart). Repetitive regret thus involves a repeated focus on self-blaming "what

1. We use the term repetitive thought (as per Watkins, 2008), but acknowledge that other researchers have used the term rumination to convey a similar meaning. Rumination has been defined in terms of thought processes that are repetitive but also self-focused and oriented toward negative emotions (Nolen-Hoeksema, 2000; Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008).

might have been" thoughts, and thus comprises a recurring brew of cognition and negative affect. We suggest that this new construct of repetitive regret is a particularly important marker for distress. That is, regret might be an "active ingredient," or catalyst, that amplifies the previously observed relation between repetitive thought and distress. In the present research, we measured both regret and repetitive thought so as to test whether they have independent and/or interactive associations with depression and anxiety.

In addressing these questions, the present research was structured around the tripartite model proposed by Clark and Watson (1991), in which the overlap between depression and anxiety is characterized by 3 symptom groups. First, general distress refers to aspects that are nonspecific, or common to both depression and anxiety, and centers mainly on the presence of negative affective symptoms. Second, anhedonic depression is defined in terms of the absence of positive affective experiences and disinterest in the pleasures of daily life; it is specific to depression but not anxiety. Third, anxious arousal refers to the somatic aspects of anxiety (e.g., shortness of breath, dry mouth, trembling) that are less evident in depression. Measurement of these factors has been achieved using the 90-item Mood and Anxiety Symptom Questionnaire (MASQ), which has been validated in several studies (Clark & Watson, 1991; Watson et al., 1995). Because of the cost and time constraints involved in the present research, however, we used a briefer version of this scale (mini-MASQ, Casillas & Clark, 2000). Whereas previous research on the relations of regret and repetitive thought to depression and anxiety has relied on samples of convenience, the present research was a nationally representative telephone survey, thus permitting tests of whether findings are consistent across race/ethnicity, age, education, and income.

METHOD

SAMPLE

The sample consisted of 370 adult Americans. Respondents were told at first screening that they would receive a $5 honorarium for completing the interview. Respondents gave oral informed consent to participate in this research. Their name and address were collected at the conclusion of the survey and a $5 bill was mailed to

them within 2 weeks of completing the questionnaire (27.5% of respondents refused the honorarium).

The response rate (the proportion of the eligible respondents who completed the interview) was 20.5%. The refusal rate (the proportion of the eligible respondents who either refused to complete or for some reason broke off an interview) was 49.1%. The response and refusal rates were calculated in accordance with guidelines specified by the American Association of Public Opinion Research (AAPOR), which has attempted to provide standardization of formula and definitions (and hence comparability across surveys) in the AAPOR *Standard Definitions*. We calculated the response and refusal rates using AAPOR's most widely accepted definitions, RR3 and REF2, respectively (see AAPOR, 2008).

PROCEDURE

The survey used a simple random sample, conducted by telephone. The survey was completed by the Survey Research Laboratory, an independent commercial research unit affiliated with the University of Illinois that has, since 1964, specialized in conducting survey research of the highest caliber. The population of interest was adults aged 18 and over in the contiguous United States. To identify a representative sample of the adult U.S. population, three widely accepted methodological techniques were used: random-digit dialing, within-household sampling, and sample weighting (Fowler, 2002).

Random-Digit Dialing. The survey used a random-digit-dial design. This technique, which involves using a random number generator to specify the phone numbers to be "dialed," is able to identify unlisted as well as listed phone numbers, and thus is considered superior to methods based on selection from phone books (Potthoff, 1994). A representative sample may be realized via this method because every American with access to telephone service has an equal chance of being contacted.[2] Once contact was made with a phone number/household, one respondent from within that household was sampled from among all eligible respondents.

Within-Household Sampling. In households in which more than one adult was eligible, the respondent was selected using the Troldahl-Carter-Bryant method. This method is a widely accepted technique

for systematically (as opposed to randomly) selecting respondents from households so as to attain better representativeness (e.g., Czaja, Blair, & Sebestik, 1982). The likelihood of error due to within-household noncoverage is minimized because all eligible respondents in a household are considered equally. In this method, the respondent is asked how many adults are in the household and how many of those are women. Using one of four matrices, the interviewer selects a respondent based on the 2x2 matrix that crosses sex and age (e.g., the youngest man, the oldest woman, etc). The matrix frequencies were modified to ensure greater selection of older men, because women more often act as household gatekeepers and men tend to be less agreeable to interviews than women.

Sample Weighting. To improve further the representativeness of our conclusions, the data from each respondent were weighted by specific demographic characteristics. That is, the sex, race, and age of our obtained sample were compared to U.S. Census figures. If a demographic group were over- or under-represented in our sample, a compensatory correction weight makes individual respondents from those groups contribute less or more, respectively, to the descriptive statistical conclusions (Fowler, 2002).

The weights were calculated in two stages. First, the data were adjusted so that the time zone distribution of the completed interviews corresponded to the distribution in the overall sample of contacted households, thereby adjusting for minor differences in refusal rate across time zones. Second, the marginal distributions of sex, race, and age were adjusted to conform to the marginal distributions of those variables in the 2000 U.S. Census. This resulted in the generation of a single omnibus weight for each individual participant, which were used in all analyses reported.

To summarize, this simple random sample survey design made use of three standard and widely used techniques designed to secure a representative sample: random-digit dialing, within-household sampling, and sample weighting.

Interviews. Interviews were conducted by telephone, with a mean duration of 21 mins. Interviews were computer-assisted, and used the Computer Assisted Survey Execution System (CASES) programming language. This procedure allowed the survey data to be entered by the interviewer into a notebook computer as it was

2. As of 2007, 88.4% of Americans have access to telephone service (Belinfante, 2008).

asked (thus eliminating the need for subsequent data entry) and also ensured that questions that were not relevant to the respondent were skipped automatically. Most interviewing was conducted on weekday evenings and weekends to increase the chance of successful contact with respondents. A maximum of twenty contact attempts were made, at different times of day and on different days of the week, before finalizing a case as noncontact. In the case of refusals, two callbacks were made at a later time by an interviewer experienced at refusal conversion to increase the probability of cooperation.

MEASURES

Regret was measured with a 6-item scale ($\alpha = .65$) validated via pretesting with undergraduate students. Repetitive thought was measured using a 3-item scale ($\alpha = .65$), with items selected on the basis of item-total correlations in the data set reported in Segerstrom et al. (2003). These items were selected in particular for their neutrality with regard to thought content and thought valence. Both the regret and repetitive thought scales had 5 response options ranging from strongly disagree to strongly agree (see Appendix for items).

Three mental health variables were assessed (scales from Casillas & Clark, 2000): general distress (8 items, $\alpha = .83$), anhedonic depression (8 items, $\alpha = .88$), and anxious arousal (10 items, $\alpha = .79$). Some examples of the items comprising these scales are as follows, written in the telegraphic form that appeared on the interviewers' computer-assisted questionnaire interface: general distress (e.g., Past week, how often felt hopeless; Past week, how often felt discouraged); anhedonic depression (e.g., Past week, how often felt nothing was enjoyable; Past week, how often felt having a lot of fun [reverse-scored]); anxious arousal (e.g., Past week, how often felt short of breath; Past week, how often felt yourself shaking). All 3 mental health variables used a 5-point response scale with the following options: never, rarely, sometimes, frequently, and always.

Respondents also gave information regarding the following demographic characteristics: race/ethnicity, age, education, and income.

RESULTS

All analyses were conducted using standardized scores. Not surprisingly, the mental health variables were positively skewed (i.e., most people clustered at the low end of these scales); analyses were therefore conducted using the log-transformed scores so as to correct for nonnormality. Analyses were conducted using weighted (by sex, race, and age) standardized scores to enhance the representativeness of conclusions.

The zero-order correlations among the primary measures are depicted in Table 1. Consistent with Casillas and Clark (2000), general distress was substantially related to both anhedonic depression ($r = .53$, $p < .001$) and anxious arousal ($r = .54$, $p < .001$), but the latter two were more modestly related ($r = .25$, $p < .001$). Regret and repetitive thought were correlates as well, $r = .41$, $p < .001$. Regret and repetitive thought are conceptually distinct, and this moderate correlation indicates that some people are regretful without repetitiveness, some are repetitive without being regretful, yet still others do both. The next analyses examined the interactive effects of regret and repetitive thought.

Separate analyses were conducted on general distress, anhedonic depression, and anxious arousal, with each regression model involved entry of regret and repetitive thought at the first step, then entry of the interaction term at the second step (see Table 2 for summary). For the general distress model (adjusted $R^2 = .25$), all three predictors were significant: regret, standardized $B = .31$, $t = 5.98$, $p < .001$, $R^2 = .12$; repetitive thought, $B = .20$, $t = 3.93$, $p < .001$, $R^2 = .12$; interaction, $B = .18$, $t = 3.98$, $p < .001$. For the anhedonic depression model (adjusted $R^2 = .16$), regret was the *only* significant predictor ($B = .38$, $t = 6.93$, $p < .001$). For anxious arousal, (adjusted $R^2 = .11$), both regret and repetitive thought, but *not* their interaction term, were significant predictors: regret, $B = .21$, $t = 3.76$, $p < .001$; repetitive thought, $B = .15$, $t = 2.68$, $p = .008$; interaction, $B = .08$, $t = 1.64$, $p = .10$.

Thus, regret was associated with general distress, anhedonic depression, and anxiety, even when controlling for repetitive thought. By contrast, repetitive thought was uniquely associated with general distress and anxious arousal, but not with anhedonic depression. Of greatest interest, the interaction between regret and repetitive thought was associated with a particularly sharp increase in general distress, but not with anhedonic depression nor anxious arousal.

TABLE 1. Correlations and Descriptive Statistics

	1	2	3	4	5
1. Regret	—				
2. Repetitive Thought	.41**	—			
3. General distress	.44**	.37**	—		
4. Anhedonic depression	.41**	.23**	.53**	—	
5. Anxious arousal	.30**	.26**	.54**	.25**	—
Cronbach's α	.65	.65	.84	.88	.79
Minimum	1	1	1	1	1
Maximum	3.67	4.00	4.63	5.00	3.50
M	2.17	2.42	1.83	2.27	1.49
SD	.42	.53	.71	.75	.52

Note. *$p < .05$, two-tailed; **$p < .01$, two-tailed. Degrees of freedom for all correlations was 370.

Past research showed that women engage in more (negatively valenced) repetitive thought than men (e.g., Butler & Nolen-Hoeksema, 1994), but are not more regretful overall than men (Roese et al., 2006). In our sample, women scored higher than men in both regret and repetitive thought, $F(1, 368) = 3.37, 5.95$, $ps = .07, .02$, $\eta^2 = .02, .009$. Consistent with previous research (e.g., Nolen-Hoeksema, 1987), women reported greater general distress, anhedonic depression, and anxious arousal than did men, $F(1, 368) = 9.98, 13.1, 16.5$, all $ps < .002$, $\eta^2 = .03, .04, .007$. These main effects are summarized in Table 3. Importantly, neither regret nor repetitive thought mediated the sex differences in mental health variables (i.e., the relations were unchanged by inclusion of regret and repetitive thought as covariates).[3] We further tested whether the relations between regret, repetitive thought, and the mental health outcomes were qualified by sex of respondent. This was done by assessing each of general distress, anhedonic depression, and anxious arousal in separate regressions, with regret, sex, and the regret by sex interaction term entered as predictors. Similar models were constructed to test the repetitive thought by sex interaction. The interaction term was not significant in any of these tests. Thus, the basic pattern of relations involving mental health outcomes held for both women and men, even though women tended to score higher than men as a background main effect.

TABLE 2. Relations Between Regret, Repetitive Thought, and Mental Health Variables

	Regret	Repetitive Thought	Interaction (Repetitive Regret)	R^2
General distress	.31**	.20*	.18**	.25
Anhedonic depression	.38**	.05	.02	.16
Anxious arousal	.21**	.15	.08	.11

Note. Values are standardized betas; columns indicate predictor variables entered into 3 models corresponding to rows. *$p < .05$, two-tailed; **$p < .01$, two-tailed. The degrees of freedom (residual) for all three models was 366.

A representative sample affords the opportunity to examine whether the main findings consistently appear across the following demographic variables: race/ethnicity, age, education, and income. In general, our main findings were consistent across these variables. Beginning with race/ethnicity, our representative sample for the most part mirrored the race and ethnic breakdowns of the United States. However, our sample under-represented Asians (n = 5) and American Indians (n = 7), hence these groups were left out of the race/ethnicity analysis. Sufficient sample sizes were available, however, to test whether the pattern of relations involving mental health outcomes held among African Americans (n = 33) and Hispanic Americans (n = 21), as benchmarked against White participants (n = 301). No race/ethnicity main effects were found among the variables of regret, repetitive thought, general distress, anhedonic depression, and anxious arousal. Using the same strategy as for testing sex of respondent as a moderating variable, separate analyses to test the race/ethnicity interaction term revealed no significant effects. Thus, the same pattern of relations involving regret, repetitive thought, and the mental health variables was evident among African Americans, Hispanic Americans, and Hispanic Americans.

As a zero-order correlation, age was negatively associated with repetitive thought (B = -.19, t = -3.65, $p < .001$) but not regret (B = -.04, t = -.82, p = .41). That is, older Americans reported less repetitive thought than younger Americans, yet did not differ from

3. With regard to the sex difference involving both regret and rumination, we recognize that interpretation of ANCOVA results may be problematic when the independent variables differ on the covariate (Miller & Chapman, 2001). In the present case, however, inclusion of the covariates did not alter the main finding. If inclusion of covariates substantially changed the result, then interpretation of this change would be ambiguous.

TABLE 3. Sex Differences in Regret, Repetitive Thought, and the Mental Health Variables

	Women	Men	η^2	*p*
Regret	2.22	2.12	.02	.02
Repetitive thought	2.48	2.38	.009	.07
General distress	1.87	1.67	.03	.002
Anhedonic depression	2.31	2.05	.03	<.001
Anxious arousal	1.59	1.38	.04	<.001

Note. The mental health variables were positively skewed, hence analysis of sex differences was conducted using log-transformed scores (two-tailed). The means presented here are untransformed (degrees of freedom for all tests was 368).

younger Americans in their regret experiences. Age was associated with both general distress and with anhedonic depression. Older Americans reported fewer symptoms of general distress, $B = -.17$, $t = -3.53$ $p < .001$, but more symptoms of anhedonic depression, $B = .12$, $t = 2.47$, $p = .02$. Age was not related to anxious arousal, $B = -.08$, $t = -1.50$, $p = .13$. Again using the same strategy as described above, separate analyses were run to test the age interaction term. In no case was the interaction term significant, thus age of respondent did not moderate any of the main findings.

Higher levels of education corresponded to lower levels of regret ($B = -.29$, $t = -5.74$, $p < .001$), and lower levels of repetitive thought ($B = -.20$, $t = -3.84$, $p < .001$). Although education was unrelated to general distress and anhedonic depression, it was associated with reduced anxiety ($B = -.23$, $t = -4.58$, $p < .001$). Education qualified the main findings in only one respect: with decreasing levels of education, regret became a more powerful predictor of distress (interaction $B = -.14$, $t = -2.99$, $p = .003$). One way of interpreting this pattern is that higher education buffers against the depressogenic effect of regret. Overall, however, the general pattern of relations among regret, repetitive thought, and the mental health variables held at all levels of education.

Lower income was associated with higher levels of regret ($B = -.41$, $t = -8.10$, $p < .001$), RT, ($B = -.23$, $t = -4.32$, $p < .001$), general distress ($B = -.15$, $t = -2.69$, $p = .008$), anxious arousal, ($B = -.20$, $t = -3.77$, $p < .001$), but not with anhedonic depression ($p = .09$). As with the other demographic variables, variation in income did not qualify any of the main findings.

DISCUSSION

Past research has demonstrated connections between regret and repetitive thought on the one hand, and mental health variables such as depression and anxiety on the other. The present findings explored these relations in a representative national sample, with responses obtained via telephone interview. The research was guided by the tripartite model (Clark & Watson, 1991; Watson et al., 1995), in which the overlap between depression and anxiety is explained in terms of a general (nonspecific) distress factor, but also two relatively independent factors corresponding to anhedonia (specific to depression) and anxious arousal (specific to general anxiety). Although there was overlap between regret and repetitive thought (i.e., they were correlated), they nevertheless showed distinct patterns of relations to the mental health variables. Both were associated with general distress. Regret but not repetitive thought was associated with anhedonic depression, and regret but not repetitive thought was associated with anxious arousal. Because we used a regression approach in which regret and repetitive thought were entered as simultaneous predictors, we were able to test whether the previously established links between regret and depression (e.g., Markman & Miller, 2006; Monroe et al., 2005) could be explained by the link between repetitive thought and depression (e.g., Nolen-Hoeksema, 2000; Segerstrom et al., 2000), or vice versa. From Table 2, it is clear that in no case did repetitive thought explain away the relation of regret to mental health variables: regret was always a significant predictor even when repetitive thought was included in the model. By contrast, the same was not true for repetitive thought: it predicted general distress significantly and independently of regret, but explained no further variation in anhedonic depression nor in anxious arousal when regret was included in the model.

Most interesting of all, the interaction between regret and repetitive thought (which we termed repetitive regret) was highly predictive of general distress. As depicted in Figure 1, when repetitive thought is lower, regret only modestly predicts distress, but when repetitive thought is higher, regret is much more highly predictive of distress. Stated somewhat differently, the combination of regret and repetitive thought is particularly predictive of distress. Repetitive regret was not related, however, to anhedonic depression nor anxious arousal. Our conceptualization of repetitive regret centers on the experience of having the same specific regrets coming repeatedly to mind (e.g., wishing repeatedly that one had married

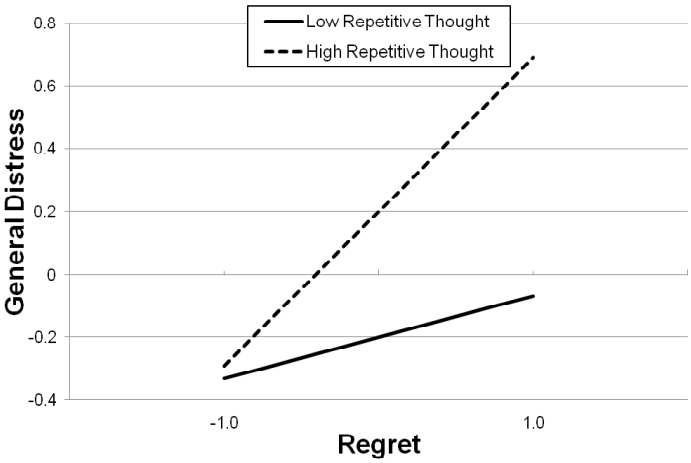

FIGURE 1. Interaction Between Regret and Repetitive Thought in Predicting General Distress

Note. This figure depicts the interaction between regret and repetitive thought in predicting general distress. All scale values are standardized. Higher versus lower repetitive thought, and higher versus lower regret, correspond to one standard deviation above and below the mean, respectively. The positive relation between regret and general distress is greater when it involves high as opposed to low repetitive thought.

her high school sweetheart). Repetitive regret thus involves a recurring focus on both the negative affect aspect and the self-blaming what might have been aspect of regret. The present findings suggest that the new construct of repetitive regret is particularly important for future research examining the cognitive antecedents of mental health.

The recent literature indicates that regret (and counterfactual thinking) is not merely dysfunctional (in terms of exacerbating biases or errors, e.g., Roese, 1999; Roese & Maniar, 1997), but also offers psychological benefits in terms of signaling the presence of problems and stimulating learning from experience (Epstude & Roese, 2008; Saffrey, Summerville, & Roese, 2008; Zeelenberg & Pieters, 2007). Indeed, the absence of regret (or, more specifically, the absence of counterfactual thinking) has been associated with other mental disorders, such as schizophrenia (Hooker, Roese, & Park, 2000; Roese, Park, Smallman, & Gibson, 2008). That is, the inability to form what might have been cognitions contributes to the impair-

ment in problem-solving and hence social dysfunction widely observed in schizophrenia. The present finding of an interaction between regret and repetitive thought may provide a clue for when regret is a springboard to effective problem solving versus leading individuals down the dark alleys of distress. Repetitive regret is, we suggest, the subtype of regret most associated with negative mental health consequences.

The findings overall were strikingly consistent across Americans from different backgrounds and life circumstances. With few exceptions, the connection between regret and mental health variables was similar across sex, race/ethnicity, age, education, and, income. By examining a representative sample, the present conclusions findings may be generalized to a far broader cross-section of Americans than was possible in previous research on regret and repetitive thought. With regard to sex differences, one surprising finding emerged. Women were found to engage in repetitive thought more than did men, and women scored higher than men on all three mental health variables (replicating Butler & Nolen-Hoeksema, 1994). Further, women reported greater regret than men, contradicting other research (e.g., Roese et al., 2006). Nevertheless, irrespective of this main effect, it was striking that same pattern of inter-relations among regret, repetitive thought, and mental health variables was evident within women and men.

Our findings were consistent with past research on age differences in regret (Wrosch, Dunne, Scheier, & Schulz, 2006; Wrosch & Heckhausen, 2002), but the present research found an interesting difference between regret and repetitive thought for older adults. That is, older adults were more likely to engage in repetitive thought than younger adults, yet there was no difference as a function of age in reports of regret. This finding underscores the need in future research to consider age-related patterns of regret and repetitive thought and their impact on well-being separately. Theoretical implications for a general life-span theory of regret would certainly be shaped by such considerations (cf. Heckhausen & Schulz, 1995; King & Hicks, 2007).

It is important to recognize that the correlational nature of this research precludes assignment of causal direction. We have assumed (based on prior studies), that repetitive regret causes vulnerability to depression, the onset of which might be interactively prompted by other, more immediate stressors. However, it is no less compel-

ling to consider the reverse causal direction. For example, a genetic predisposition to suffer from general distress might bring about an increase in repetitive regret. Moreover, both causal directions may co-occur, unleashing a vicious cycle of mutually reinforcing deteriorations of mental health.

To conclude, we found that although regret and repetitive thought predict different facets of depression and anxiety, their overlap (repetitive regret) was highly predictive of general distress. Importantly, this research builds on previous findings by confirming these relations in a nationally representative sample. Regret seems to be a key ingredient that amplifies the connection between repetitive thought and general distress, and this finding holds promise for understanding when regret is the catalyst for new insights or the trigger for general distress. If future research confirms that regret is indeed an amplifier of the repetitive thought-distress relationship, one potential implication is that mental health professionals should focus their therapies on diminishing repetitive thought so the positive aspects of regret on learning can flourish.

APPENDIX

REGRET SCALE

I regret a lot of my actions.
Wish could live parts of my life over
I think "if only" a lot
Prefer to focus on future than the past*
Rarely think what "might have been"*
Like to approach life with "no regrets"*

REPETITIVE THOUGHT

Often playing back in mind past actions
Easy to put unwanted thoughts out of mind
Always seem to rehash things said/done

Note: * reverse scored

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