

Preliminary Study

As an initial examination of how people naturally understand and characterize experiences of regret, we developed a large pool of items assessing post-decisional regret, and asked individuals to rate a regrettable situation from their past using these items. Recall tasks are commonly used to assess feelings of regret (e.g., van Dijk & Zeelenberg, 2002; Roese & Summerville, 2005), and although individuals are not directly exposed to a regrettable situation, thinking about past regrets is a common aspect of regret in day-to-day life. While we anticipated that two separate factors of regret would emerge, corresponding to the affective and cognitive elements of regret, we did not impose such a factor structure a priori but took an inductive approach. Specifically, we used a principal components analysis (PCA) technique to examine if distinct clusters of items emerged in these ratings, as predicted by H1.

Method

Participants. One hundred fifty introductory psychology students at a university in the Midwestern United States participated in partial fulfillment of a course requirement.

Item pool. We compiled 50 items that addressed thoughts and feelings an individual might experience after making a regrettable decision (see Table S1). The items addressed both regret and disappointment in an effort to account for all language participants might use to talk about regret. The initial pool included new items generated by the researchers as well as a smaller set of items adapted from existing scales (Schwartz et al., 2002; Marcatto & Ferrante, 2008) in an attempt to fully capture all possible aspects of post-decisional regret.

Table S1

Preliminary Study: List of 50 items examined for Regret Elements Scale

Item
I knew that I should have chosen differently
I am experiencing regret
Things would have gone better if I had chosen another option
Before I should have chosen differently
I should have thought this decision through more carefully
I wish I could undo my decision
I am experiencing self-blame about the way I made my decision
I regret the choice that was made
I'm experiencing regret about the outcome of my decision
I feel a lot of regret about the way I made my decision
I would have been much happier had I made a different decision
I regret how things turned out
I am experiencing regret about my decision process
I feel regret about how I made my decision
I wish I had made a different decision
I should have decided differently
I feel self-blame about how I made my decision
I feel regret
I feel regret about the consequences of my decision
I wish I could change what happened
I regret my choice
I regret the way I made my decision
If I could do it over I would change my decision
I feel regretful
If only I had made a different decision, things would be better now
I wish someone else had acted differently
I am disappointed
I am sorry about what happened to me
I feel angry about what happened
I feel disappointed about what happened
I feel sorry
I am satisfied about what happened to me
I wish things had ended up differently
I feel ashamed
I made a poor decision
I blame myself
I would have been better off had I decided differently
I blame myself for my decision process
I feel self-blame
I really feel that I was making an error when I made that choice
I am experiencing self-blame
I feel guilty
I think I made an error in judgment
I feel like kicking myself over my decision

I feel like kicking myself
I feel badly about what I did
I feel responsible for what happened
I am happy with the way my decision turned out
In the end, I think the outcome of this decision was pretty good
The choice did me a lot of harm

Procedure. Each participant completed the study on a personal computer in an individual cubicle. Participants were instructed to think about a regrettable situation from their past and spend a few minutes writing about it using instructions modified from Roesse and Summerville (2005)..

Participants then rated how much they agreed with each of the 50 items in the context of the regrettable situation they had just written about. Each item was rated on a 7-point Likert scale (1 = Strongly Disagree, 7 = Strongly Agree). The order of the items was randomized by a computer and evenly presented across three sequential screens.

Results

We first conducted a principal components analysis using SPSS. As we expected that the factors would be highly correlated with each other due to the common focus on regret, we used an Oblimin rotation with a delta set to 0 (Hair & Anderson, 1998) to examine the factor loadings of each item. Initial visual inspection of the scree plot revealed a three factor structure. One of the three factors clearly corresponded to items focused on disappointment and not regret (e.g., “I feel disappointed about what happened,” “I wish things had ended up differently”) consistent with the theoretical distinctions between these constructs. We removed the 7 items with moderate to high loadings ($> .50$) on this factor in order to retain the intended focus of the eventual scale on regret. Following the recommendations of Floyd and Widaman (1995), we also removed 14 items that had moderate to low loadings (< 0.60) on all three factors.

A subsequent principal components analysis of the reduced 29-item pool produced a scree plot that suggested a two factor structure, consistent with our attempt to remove the disappointment-factor items. Factor loadings for each item using an Oblimin rotation are presented in Table S2. To avoid confounds with lay theories of regret (Saffrey, Summerville, & Roese, 2008), we eliminated all remaining items that contained the word “regret” to prevent individuals from using their own inherent biases (e.g., participants who assert “I don’t believe in regret”). The remaining items with high loadings only on the first factor (> 0.75) had an emotional focus. Items with high loadings only on the second factor (> 0.71) had a cognitive focus, mentioning characteristics of counterfactual thinking such as poor decisions and choices. We retained 16 items that had high loadings on only one of the two factors: 9 items loading onto the first factor ($\alpha = .95$) and 7 items loading onto the second factor ($\alpha = .94$). These two factors were significantly correlated, $r = .63, p < .001$.

Table S2

Preliminary Study: Factor loadings from exploratory factor analysis of reduced item pool

Item	F1	F2
I am experiencing self-blame about the way I made my decision (A1)	.94	-.11
I feel sorry (A2)	.75	.02
I am experiencing self-blame (A3)	.93	-.08
I feel guilty (A4)	.88	-.15
I feel like kicking myself (A5)	.91	-.14
I feel self-blame (A6)	.92	-.04
I feel self-blame about how I made my decision (A7)	.85	.01
I feel ashamed (A8)	.83	-.06
I feel like kicking myself over my decision (A9)	.89	-.10
Things would have gone better if I had chosen another option (C1)	-.08	.89
I wish I had made a different decision (C2)	.09	.85
I should have decided differently (C3)	.14	.82
I would have been better off had I decided differently (C4)	-.01	.84
Before I should have chosen differently (C5)	.20	.71
If I could do it over I would change my decision (C6)	.01	.88

I would have been much happier had I made a different decision (C7)	-.03	.81
I am experiencing regret	.82	.05
I feel a lot of regret about the way I made my decision	.78	.14
I am experiencing regret about my decision process	.72	.13
I feel regret	.70	.24
I feel regret about the consequences of my decision	.67	.23
I feel regretful	.67	.28
I am sorry about what happened to me	.53	.06
I wish things had ended up differently	.26	.09
I made a poor decision	.28	.65
I blame myself	.72	.11
I blame myself for my decision process	.74	.11
I feel badly about what I did	.68	.18
I feel responsible for what happened	.69	.11

Note. Preliminary Study factor loadings of each item in the 29-item pool onto the two factors. The first 16 items (A1-9 and C1-7) were retained for use in Study 1. The items included in the RES are shown in **bold**.

Discussion

Principal components analysis revealed a two-factor structure in items assessing regret, supporting Hypothesis 1, which predicted that cognitive and affective components of regret will emerge as distinct dimensions. While the two factors were related, each of them appeared to address a distinct aspect of regret, specifically the affective and cognitive components of regret.

Study 1: Item Reduction

To reduce the 16 item pool to the 10-item scale, we created an initial model that included all 16 items, with nine measuring the affective component and seven measuring the cognitive component. To eliminate items, we focused on reducing redundancy and retaining highly loading items. Two items of the affective subscale (“I am experiencing self-blame about the way I made my decision” and “I feel self-blame about how I made my decision”) were redundantly assessing self-blame related to the decision (inter-item $r = .78$), and two items (“I am experiencing self-blame” and “I feel self-blame”) were redundantly assessing general self-blame (inter-item $r =$

.79). We therefore eliminated the lowest loading item within each redundancy (Clark & Watson, 1995). We also eliminated the two lowest loading items from each subscale (.69 for each affective item, .76 and .72 for the cognitive items), resulting in five items assessing the affective component and five items assessing the cognitive component.

We first examined the model using all 16 items to measure two correlated latent constructs. Overall, goodness of fit indices suggested less than good fit for all but one index: $\chi^2(103) = 338.88, p < .05$; CFI = 0.91; RMSEA = 0.11; SRMR = 0.05. However, chi-square differences between models further indicated that the 10-item model fit significantly better than the 16-item model, $\Delta\chi^2(69) = 249.58, p < .001$.

Questionnaires Used (Study 1):

Mood and Anxiety Symptom Questionnaire (MASQ; Watson & Clark, 1991):

General Distress:

Felt tense or “high strung”

Had hot or cold spells

Felt hopeless

Felt keyed up, “on edge”

Felt worthless

Felt like a failure

Felt uneasy

Felt discouraged

Anxious Arousal:

Was short of breath

Felt dizzy or lightheaded

Hands were cold or sweaty

Hands were shaky

Had trouble swallowing

Felt depressed

Felt like I was choking

Muscles twitched or trembled

Was trembling or shaking

Had a very dry mouth

Melbourne Decision-Making Scale (Mann et al., 1997):

I like to consider all of the alternatives.

I try to find out the disadvantages of all alternatives.

I consider how best to carry out a decision.

When making decisions I like to collect a lot of information.

I try to be clear about my objectives before choosing.

I take a lot of care before choosing.

I avoid making decisions.

I do not make decisions unless I really have to.

I prefer to leave decisions to others.

I do not like to take responsibility for making decisions.

If a decision can be made by me or another person I let the other person make it.

I prefer that people who are better informed decide for me.

I waste a lot of time on trivial matters before getting to the final decision.

Even after I have made a decision I delay acting upon it.

When I have to make a decision I wait a long time before starting to think about it.

I delay making decisions until it is too late.

I put off making decisions.

Whenever I face a difficult decision I feel pessimistic about finding a good solution.

I feel as if I am under tremendous time pressure when making decisions.

The possibility that some small thing might go wrong causes me to swing abruptly in my preference.

I cannot think straight if I have to make a decision in a hurry.

After a decision is made I spend a lot of time convincing myself it was correct.

Implicit Theories of Emotion (Tamir et al., 2007):

Everyone can learn to control their emotions.

If they want to, people can change emotions that they have.

No matter how hard they try, people can't really change the emotions they have.

The truth is people have very little control over their emotions.

Implicit Theories of World (Dweck, Chiu, & Hong, 1995):

Though we can change some phenomena, it is unlikely that we can alter the core dispositions of our world.

Our world has its basic or ingrained dispositions, and you really can't do much to change them.

Some societal trends may dominate for a while, but the fundamental nature of our world is something that cannot be changed much.

Functions of Regret (Saffrey, Summerville, & Roese, 2009):

Regret helps me make sense of past events

Regret helps me come to terms with undesirable outcomes

Regret prepares me for action

Regret helps me know how to act in the future

Regret stops me from making the same mistakes again

Regret stops me from doing dangerous or harmful things

Regret helps me gain insight to my own attributes

Regret helps me better understand the impact of my actions

Regret improves my relationships with others

Regret helps me better understand what others are thinking and feeling

Questionnaires Used (Study 3):

Regret and Disappointment Scale (RDS; Marcatto & Ferrante, 2008):

I am sorry about what happened to me

I wish I had made a different choice

I wish the events that were beyond my control had happened differently

I feel responsible for what happened to me

The events that were beyond my control are the cause of what happened to me

I am satisfied about what happened to me

Need for Cognition Scale (Cacioppo & Petty, 1982; Epstein, Pacini, Denes-Raj, & Heier, 1996):

I don't like to do a lot of thinking

I try to avoid situations that require thinking in depth about something

I prefer to do something that challenges my thinking abilities rather than something that requires little thought

I prefer complex to simple problems

Thinking hard and for a long time about something gives me little satisfaction

Faith in Intuition Scale (Epstein, Pacini, Denes-Raj, & Heier, 1996):

I trust my initial feelings about people

I believe in trusting my hunches

My initial impressions of people are almost always right

When it comes to trusting people, I can usually rely in my "gut feelings"

I can usually feel when a person is right or wrong even if I can't explain how I know it

NEO Five-Factor Inventory (Neuroticism subscale; Costa & McCrae, 1992):

In general, I am jealous.

In general, I am irritable.

In general, I am fretful.

In general, I am emotional.

In general, I am envious.

In general, I am temperamental.

In general, I am moody.

In general, I am anxious.

In general, I am relaxed.

In general, I am imperturbable.

In general, I am unexcitable.

In general, I am unenvious.

In general, I am unemotional.

Regret Proneness (Schwartz et al., 2000):

Whenever I make a choice, I'm curious about what would have happened if I had chosen differently

Whenever I make a choice, I try to get information about how the other alternatives turned out

If I make a choice and it turns out well, I still feel like something of a failure if I find out that another choice would have turned out better

When I think about how I'm doing in life, I often assess opportunities I have passed up

Once I make a decision, I don't look back