Predictably regretful: A comparison of the effects of time, domain, justification, and life rule contradiction on the intensity of regrets

Matt N. Williams (presenter)
Andy Towers, Michael Philipp, Stephen R. Hill

Regret

• “regret is an unpleasant emotion experienced when the outcome of a personally relevant decision compares poorly to the outcome of an option not chosen” (Towers, 2009, p.25)

• Experiencing regret helps us to avoid making the same decision again (O’Connor, McCormack & Feeney, 2014)

But...
• Regret is associated with depression (e.g., Roese et al. 2009)

Something that psychologists may regret…. our addiction to p

• Neville Blampied rightly criticised the excessive reliance on null hypothesis significance testing in psychology

So I’ll keep my use of p to a minimum… Instead:

Bayesian data analysis
• Allows us to make direct statements about the probability that an hypothesis is true

What causes more regret – actions or inactions?

• Economic literature: actions more regrettable than inactions (e.g., Kahneman & Tversky, 1982)

• But when you ask people what they regret in real life, inactions seem to be more commonly mentioned. In fact, folk wisdom suggests that it’s inactions that cause more regret....

You’ll never regret the things you do as much as the things you don’t

In the end, we only regret the chances we didn’t take.
Gilovich & Medvec (1994, 1995) suggest that actions are more regrettable than inactions in the short term; inactions in the long term. Reasons include:

- We're better at identifying silver linings for actions
- Consequences of actions are finite and known, consequences of inactions could be infinite
- Incompleted tasks tend to be remembered better than completed ones

Temporal theory of regret

**Other influences on regret: Justification**

- Decision-Justification Theory (Connolly & Zeelenberg, 2002) suggests that regret results from:
  1. The realisation that the outcome of a decision taken compares poorly to the outcome of another alternative
  2. The recognition that the decision was not justified

**Hypotheses:**

- Since we analyse participants' greatest life-time regrets, the temporal theory implies that inactions should be more intensely regretted than actions
- The temporal theory also implies that the greater the time passed, the less the effect of an action in comparison to an inaction
- Decision-justification theory implies that the greater the level of justification felt for a regretted decision, the lesser the regret intensity

**New hypotheses:**

- Regrets in intimate domains should be regretted more intensely
- Regrets that conflict with a participant's personal life rules should be felt more intensely.

**Method: Participants & Procedures**

- Postal survey
- 3000 participants randomly selected from NZ electoral roll & invited to take part
- 677 surveys returned, 429 had data on all the study variables used here
- 67% male
- Aged from 18 to 87 years, $M = 46.6, SD = 14.8$

**Method: Measures**

- Participants asked to describe their greatest lifetime regret
- Coded as action or inaction (or indeterminate -> excluded)
- Coded as intimate domain or not
- Regret intensity measured on 9 point rating scale
- How justified was the regretted decision?
  - 5 point rating scale
- Participants asked to bring their own important personal rules to mind, then asked if the regretted decision breached any of these rules
- Time since the regretted decision or event

**Results: Descriptive statistics**

- Mean regret intensity level was 6.0 (scale of 1-9)
- Mean justification level was 2.75 (scale of 1-5)
- Regrets were more likely to be for inactions (55%)
Results: Multiple regression (frequentist)

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Hypothesis</th>
<th>Unstd coefficient</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>n/a</td>
<td>4.99</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Time since regret (years)</td>
<td>n/a</td>
<td>0.00</td>
<td>0.94</td>
</tr>
<tr>
<td>Is regret an action?</td>
<td>Negative</td>
<td>0.02</td>
<td>0.92</td>
</tr>
<tr>
<td>Interaction: level of justification</td>
<td>Negative</td>
<td>-0.03</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Intimate regret?</td>
<td>Positive</td>
<td>1.21</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Did regret contradict participant’s life rules?</td>
<td>Positive</td>
<td>0.79</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

Notes: Response variable: Regret intensity, assessed on 9-point rating scale.
Binary variables dummy-coded.
*Justification level assessed on 5-point rating scale.

Bayesian analysis

We will look at the effect of justification level to illustrate the idea of a Bayesian analysis.

A Bayesian analysis has three main components:
- A prior probability distribution (what we believed prior to seeing the data)
- The data
- The posterior probability distribution (what we believe after seeing the data)

In this case, I used a prior indicating absolute ignorance about what values of the parameters are more likely.

Bayesian data analysis was conducted in R using MCMCpack 1.3-3 (Martin, Quinn & Park, 2013).

Prior and posterior probability

We then collected data.
And can now calculate a posterior probability distribution.
This indicates our beliefs after seeing the data.

Conclusions

As hypothesised, regrets were more intense when:
- The regret was in an intimate domain
- A regretted decision contradicted a participant’s life rules
- The participant perceived less justification for their decision.

Conclusions

But the temporal theory (and folk wisdom!) did not fare well...

Actions were more intensely regretted than inactions.
- Although when the other predictors were controlled, this effect became very small.
- And the passing of time led to the difference in regret intensity between actions and inactions becoming larger (more positive)
References / Question time


